

KIC 005706866

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
005706866-01	OBS	No	0.931459	131.629490	27.4	4.734	9.8	6.6	2.62	7066	1.60	30856.77
005706866-02	OBS	No	0.931466	131.827554	92.9	9.538	11.9	10.5	2.62	7066	2.63	30856.47

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005706866-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV
005706866-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

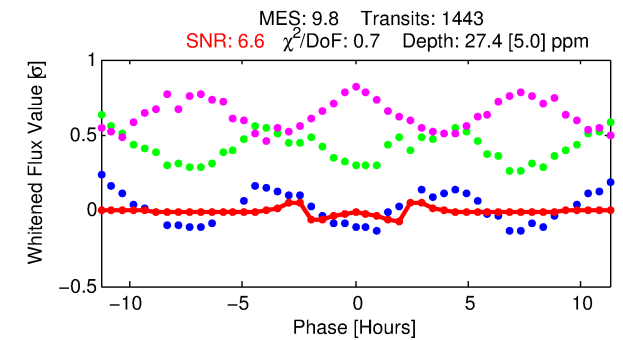
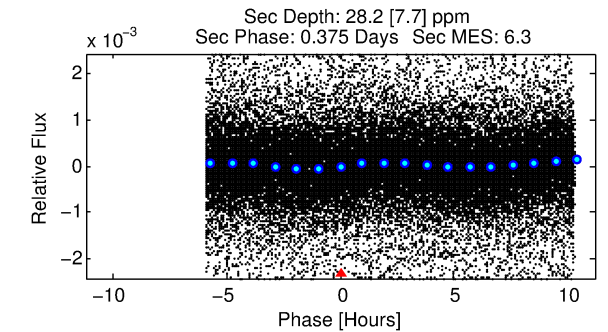
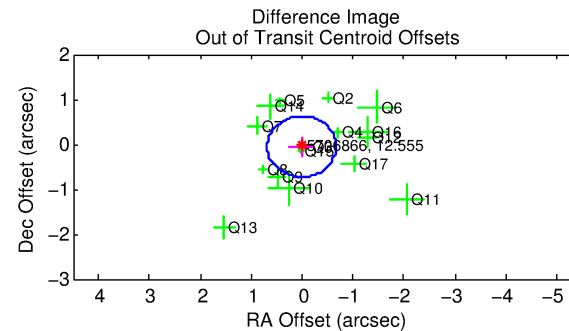
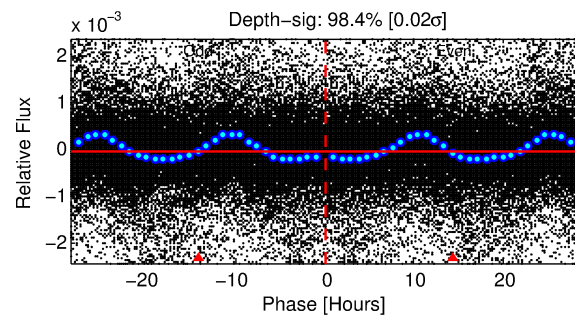
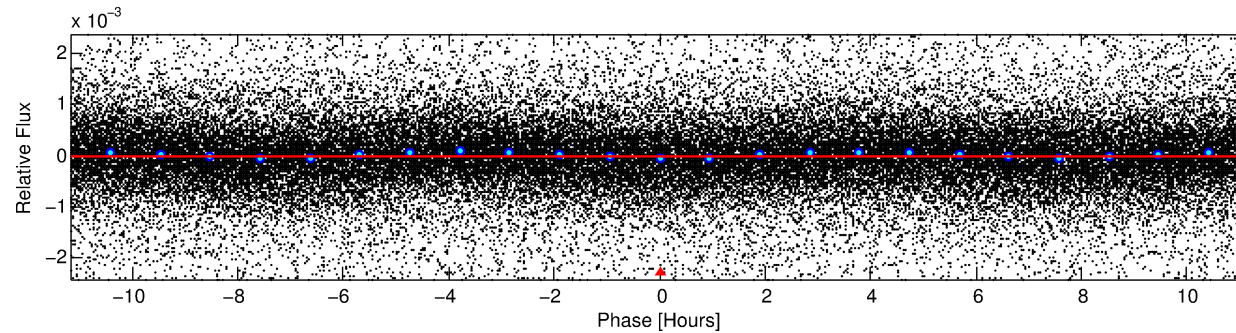
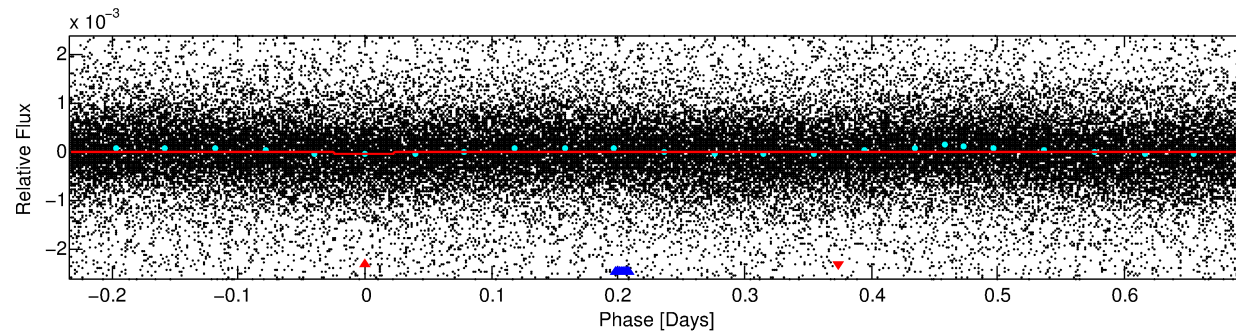
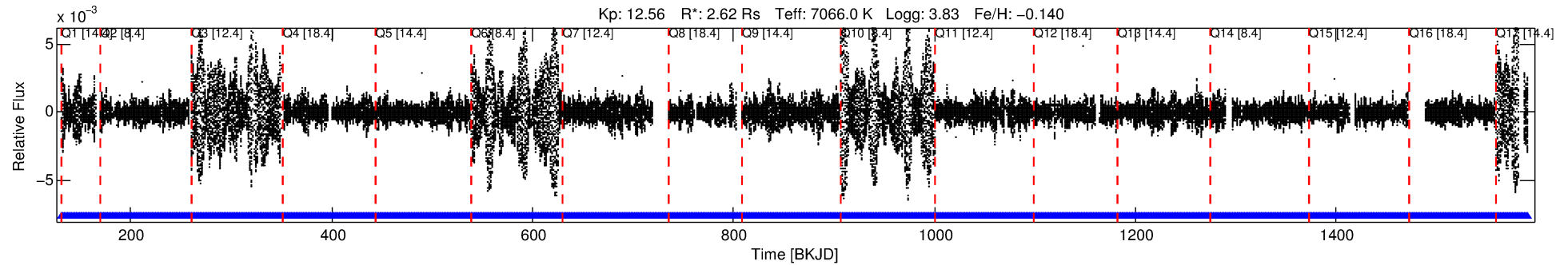
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005706866-01

No Significant Match Found

DV One-Page Summary

KIC: 5706866 Candidate: 1 of 2 Period: 0.931 d



DV Fit Results:

Period = 0.93146 [0.00001] d
Epoch = 131.6295 [0.0021] BKJD
Rp/R* = 0.0056 [0.0013]
a/R* = 1.16 [0.36]
b = 0.90 [0.26]
Seff = 30856.77 [15760.94]
Teq = 3380 [432] K
Rp = 1.60 [0.65] Re
a = 0.0223 [0.0070] AU
Ag = 3.02 [2.17] [0.93 σ]
Teffp = 6888 [937] K [3.40 σ]

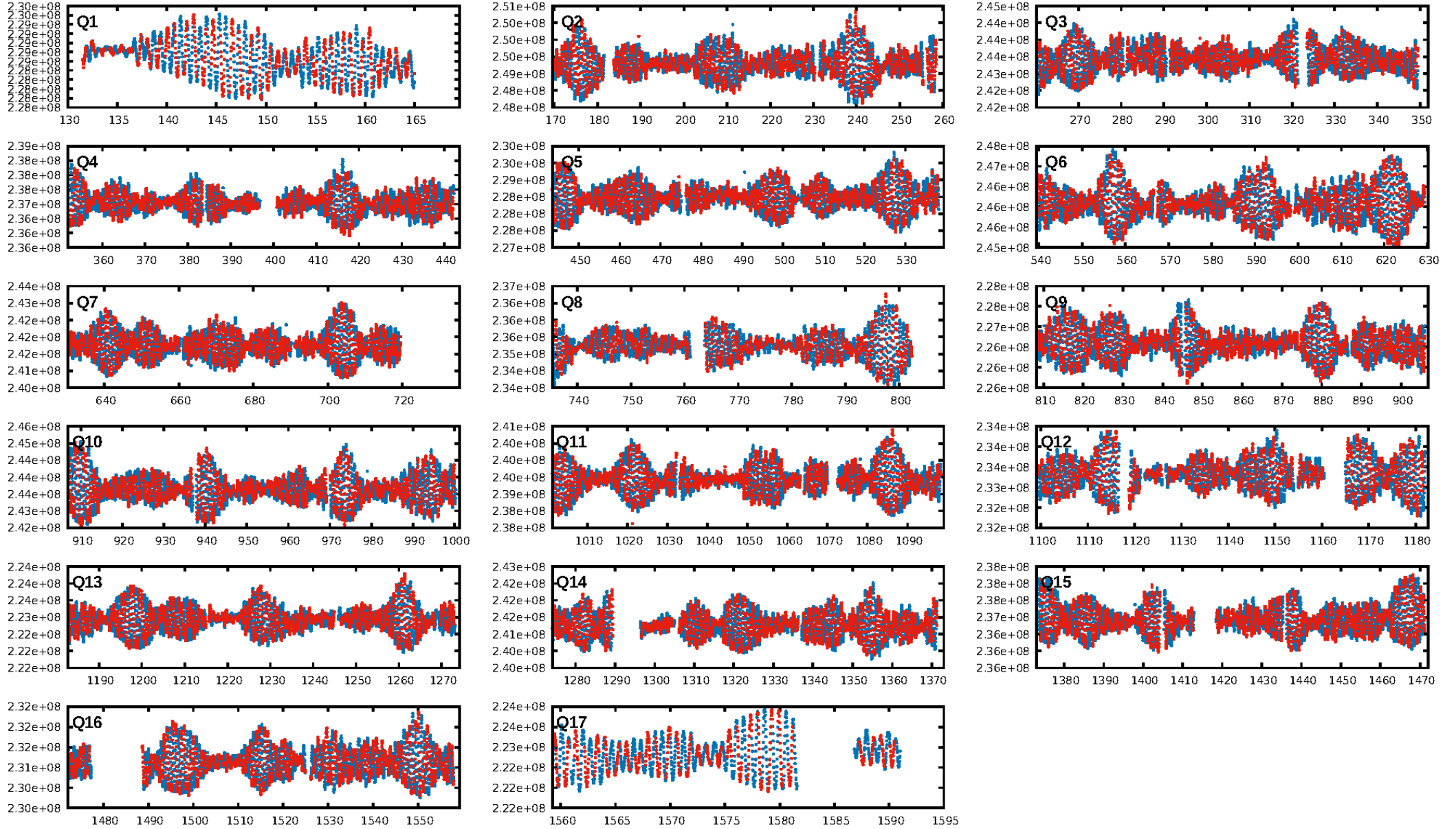
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [1379/1379]
GhostDiagnostic-chr: 1.414
Centroid-sig: 5.8%
Centroid-so: 0.650 arcsec [1.27 σ]
OotOffset-rm: 0.054 arcsec [0.24 σ]
KicOffset-rm: 0.037 arcsec [0.14 σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 0.56 [9/16]
DiffImageOverlap-fno: 0.00 [0/17]

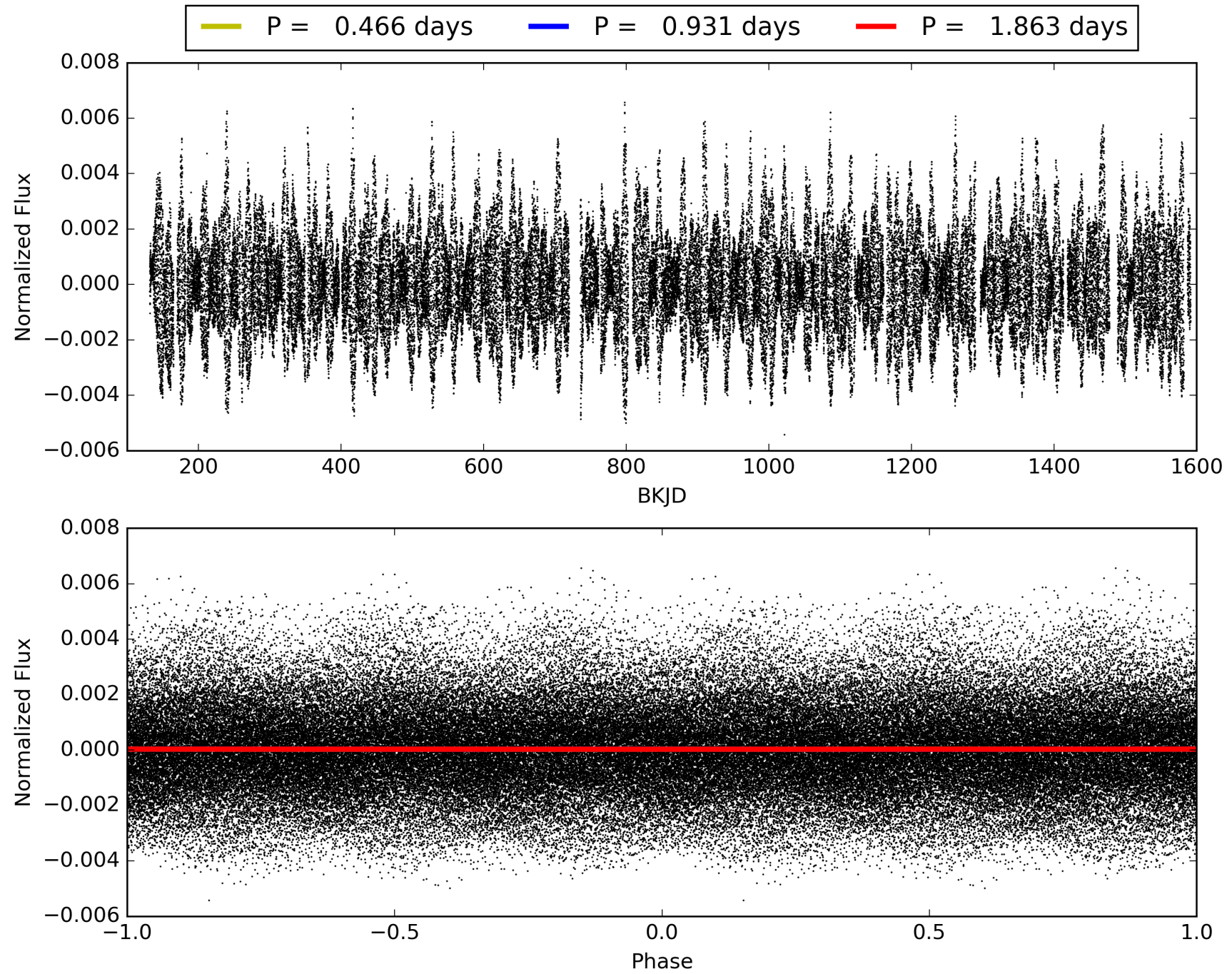
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 12:22:51 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 005706866-01, PDC Light Curves

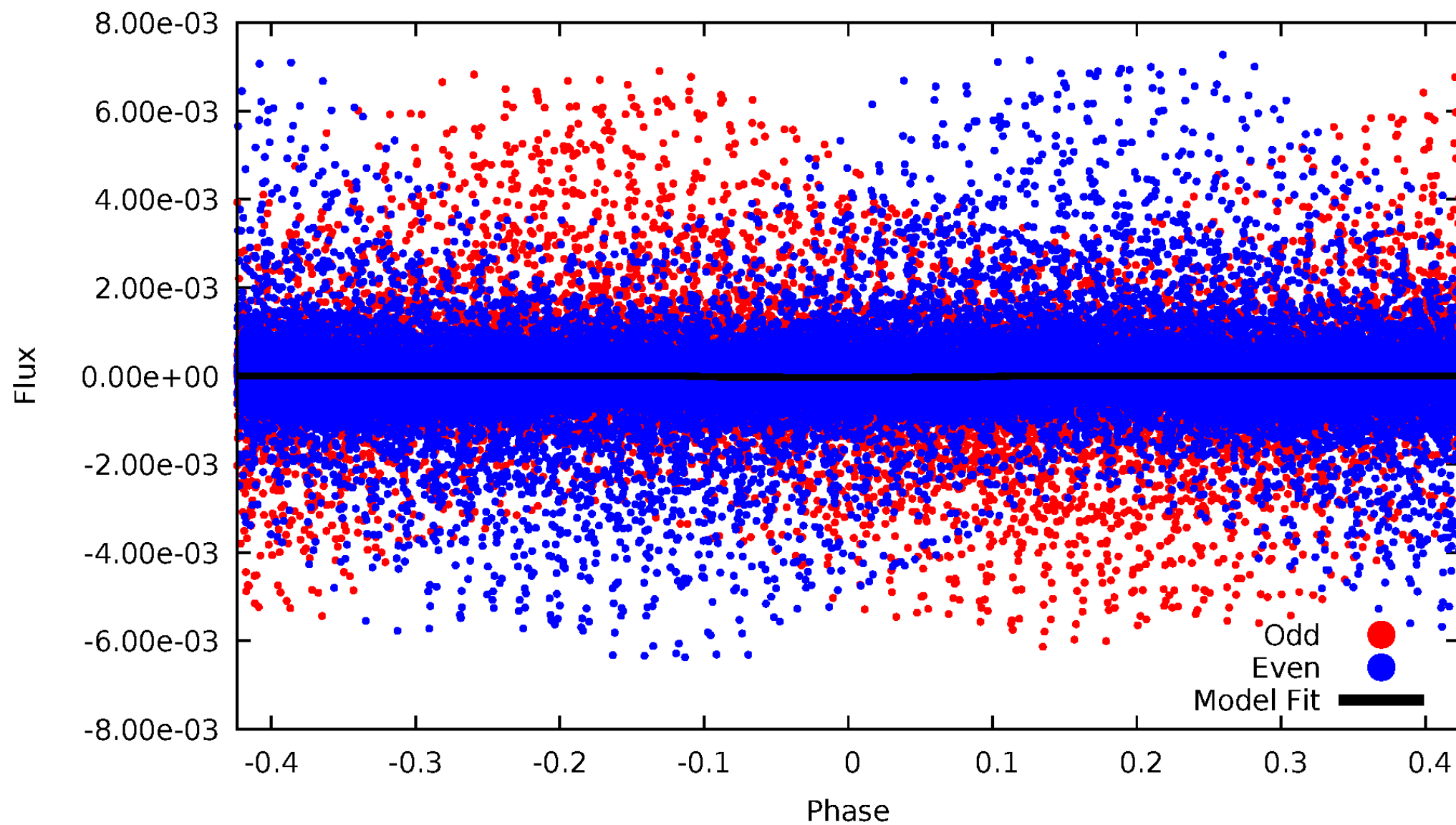


TCE 005706866-01



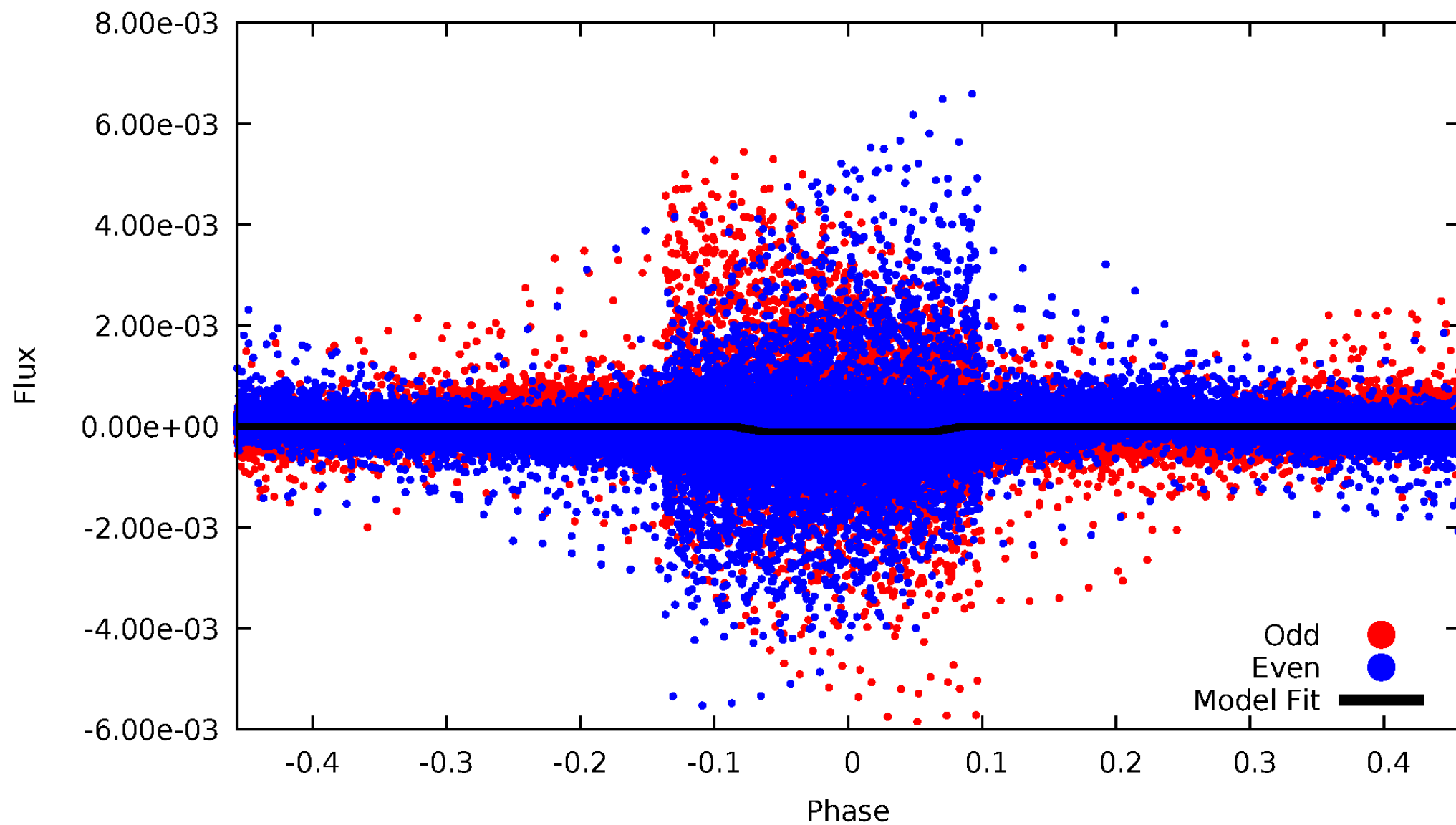
DV Odd/Even

TCE 005706866-01



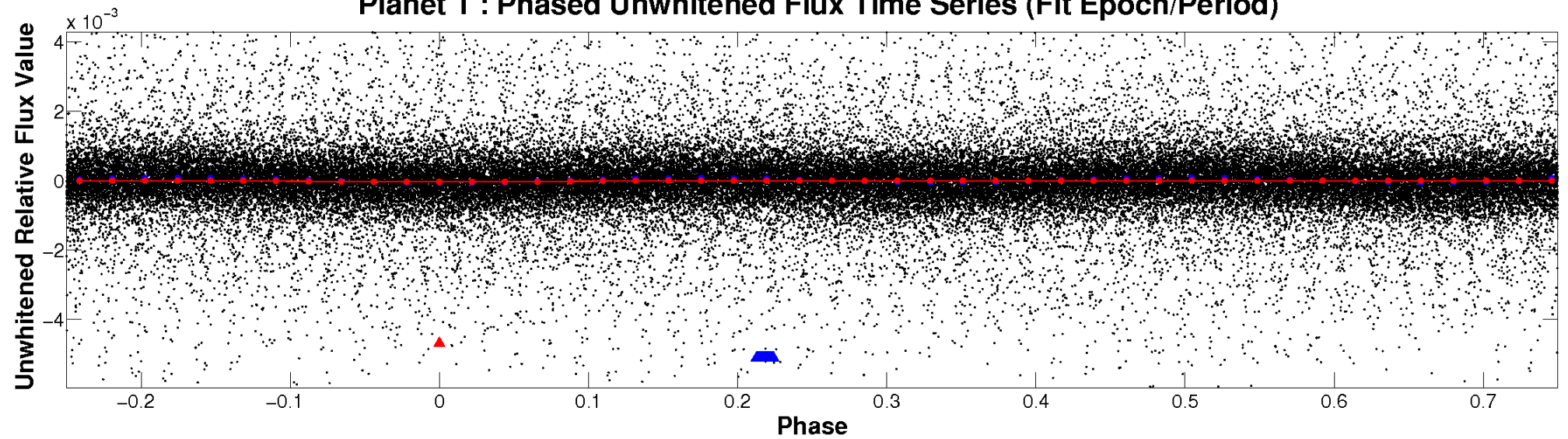
ALT Odd/Even

TCE 005706866-01

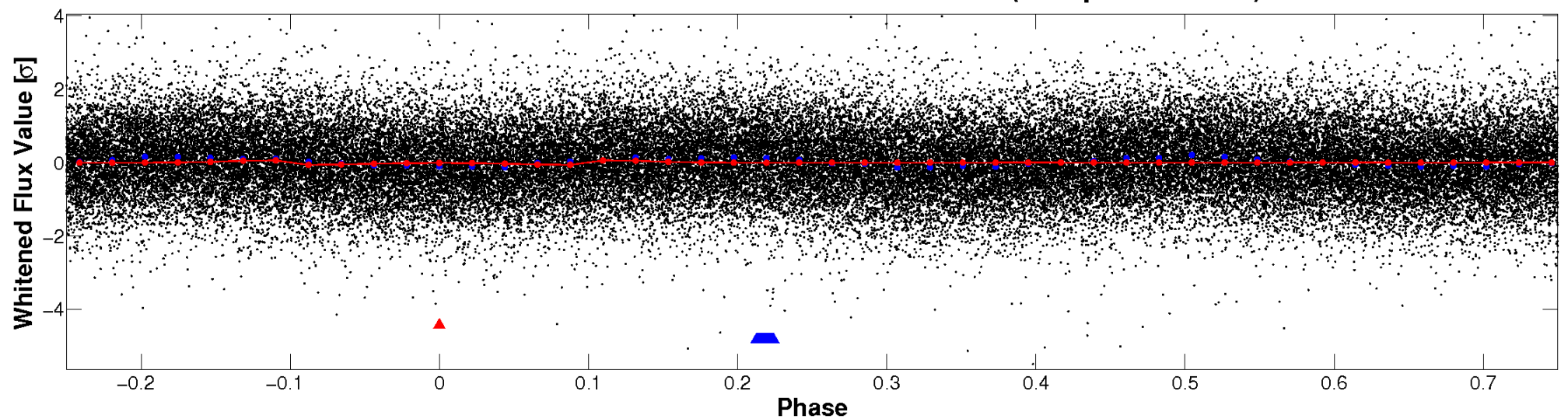


Non-Whitened Vs. Whitened Light Curve

Planet 1 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

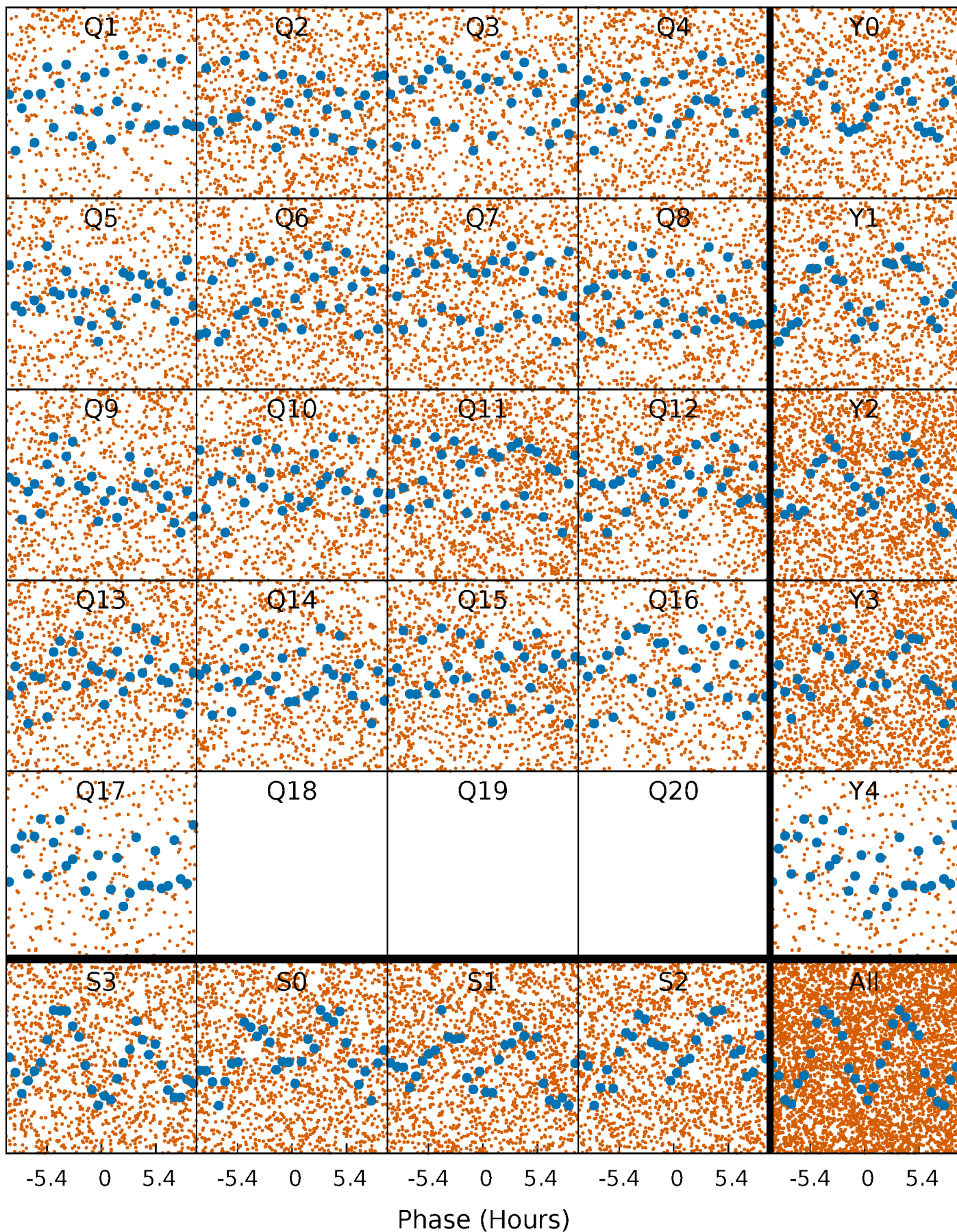


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



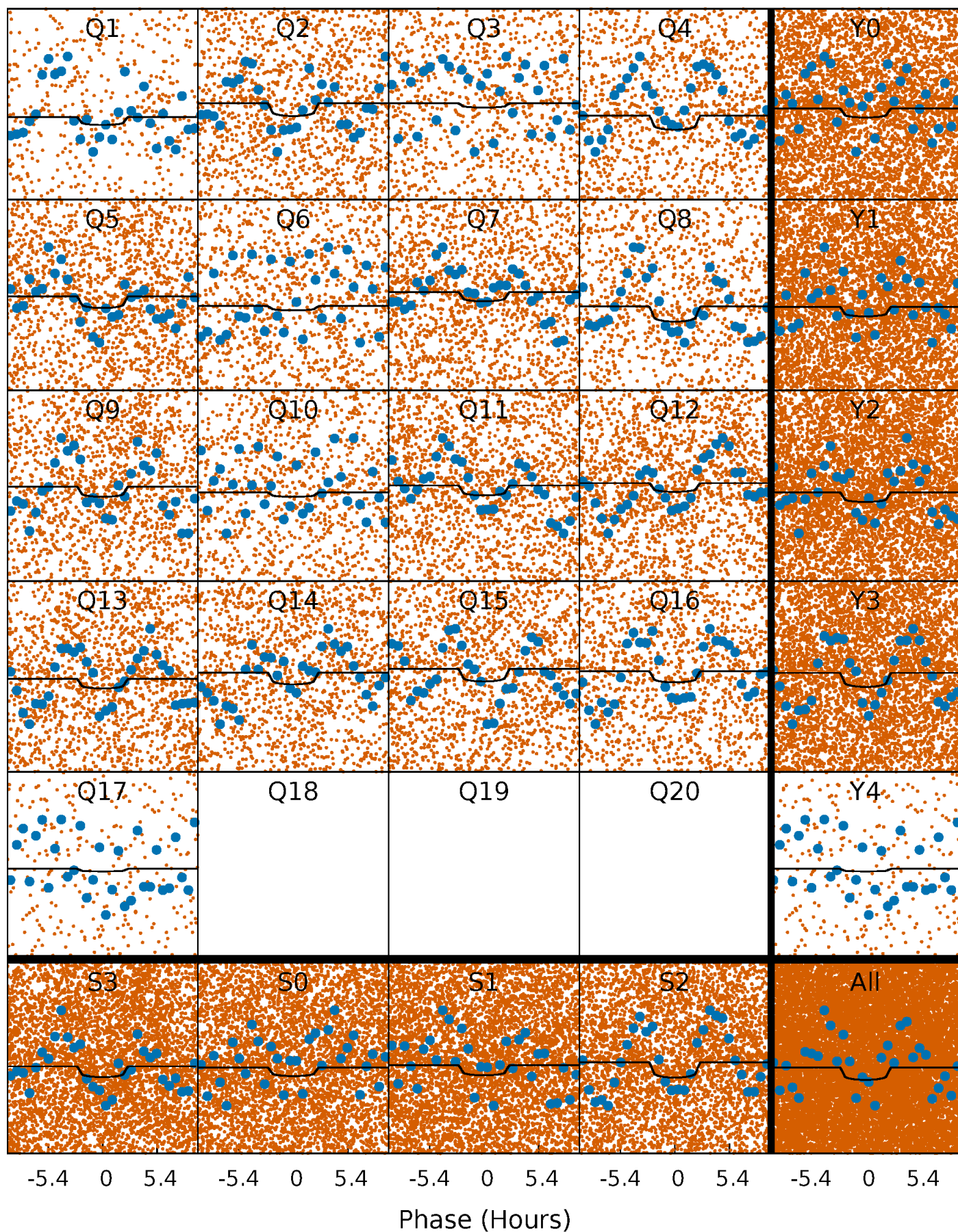
PDC Quarter-Phased Transit Curves

TCE 005706866-01 P= 0.931459 Days $T_0=131.629490$ (BKJD)



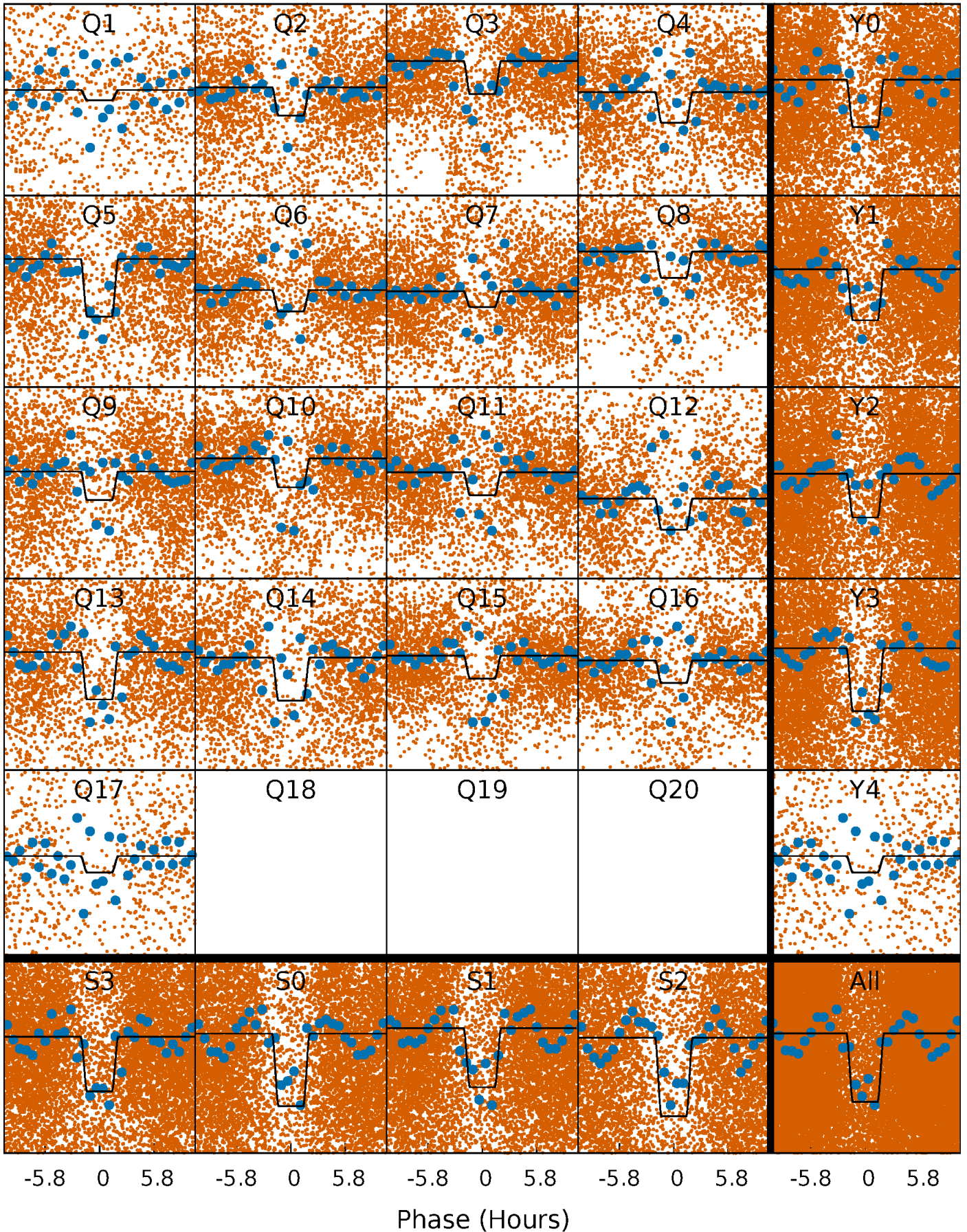
DV Quarter-Phased Transit Curves

TCE 005706866-01 P= 0.931459 Days $T_0=131.629490$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

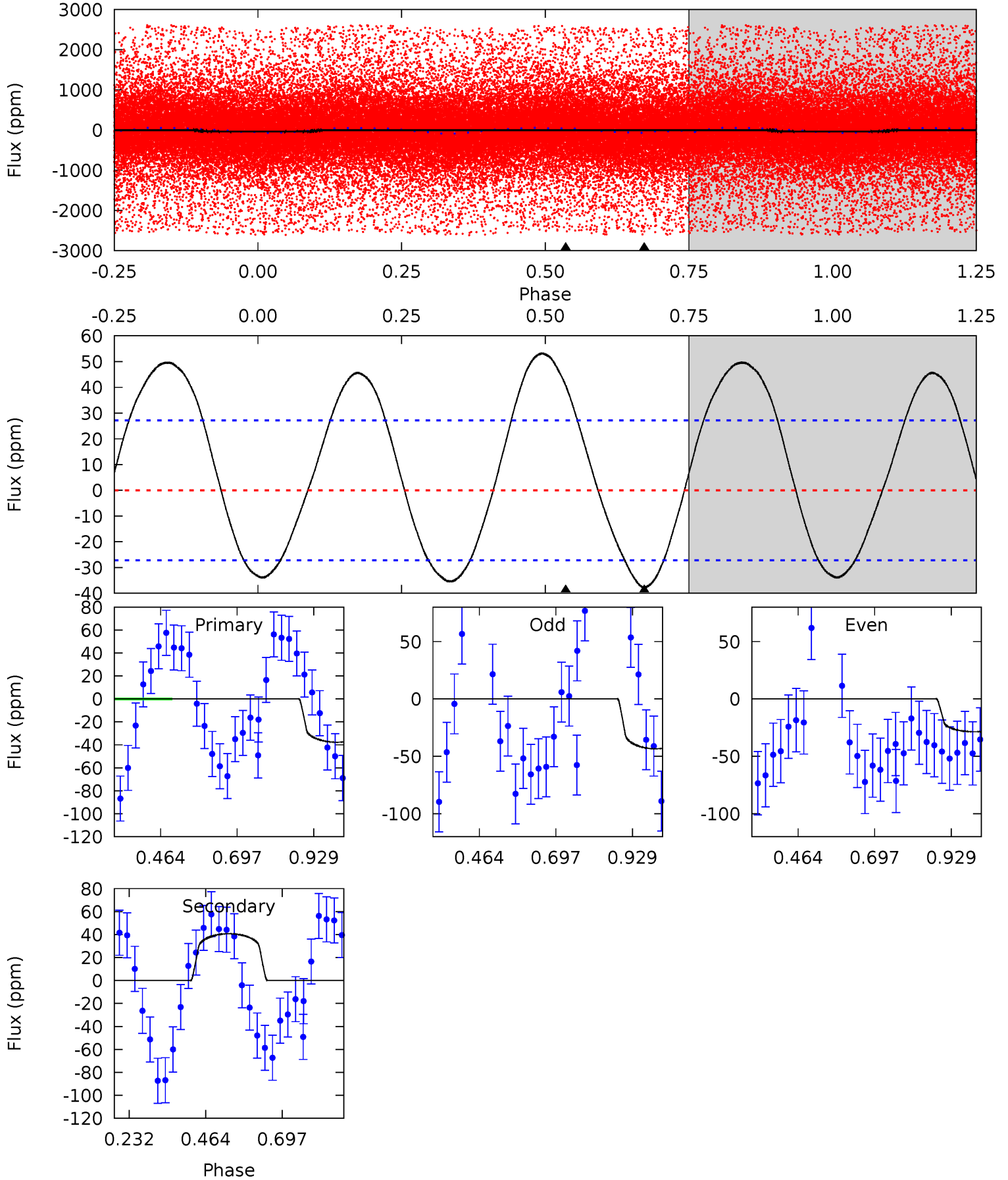
TCE 005706866-01 P= 0.931486 Days $T_0=131.612436$ (BKJD)



DV Model-Shift Uniqueness Test

005706866-01, P = 0.931459 Days, E = 130.698031 Days

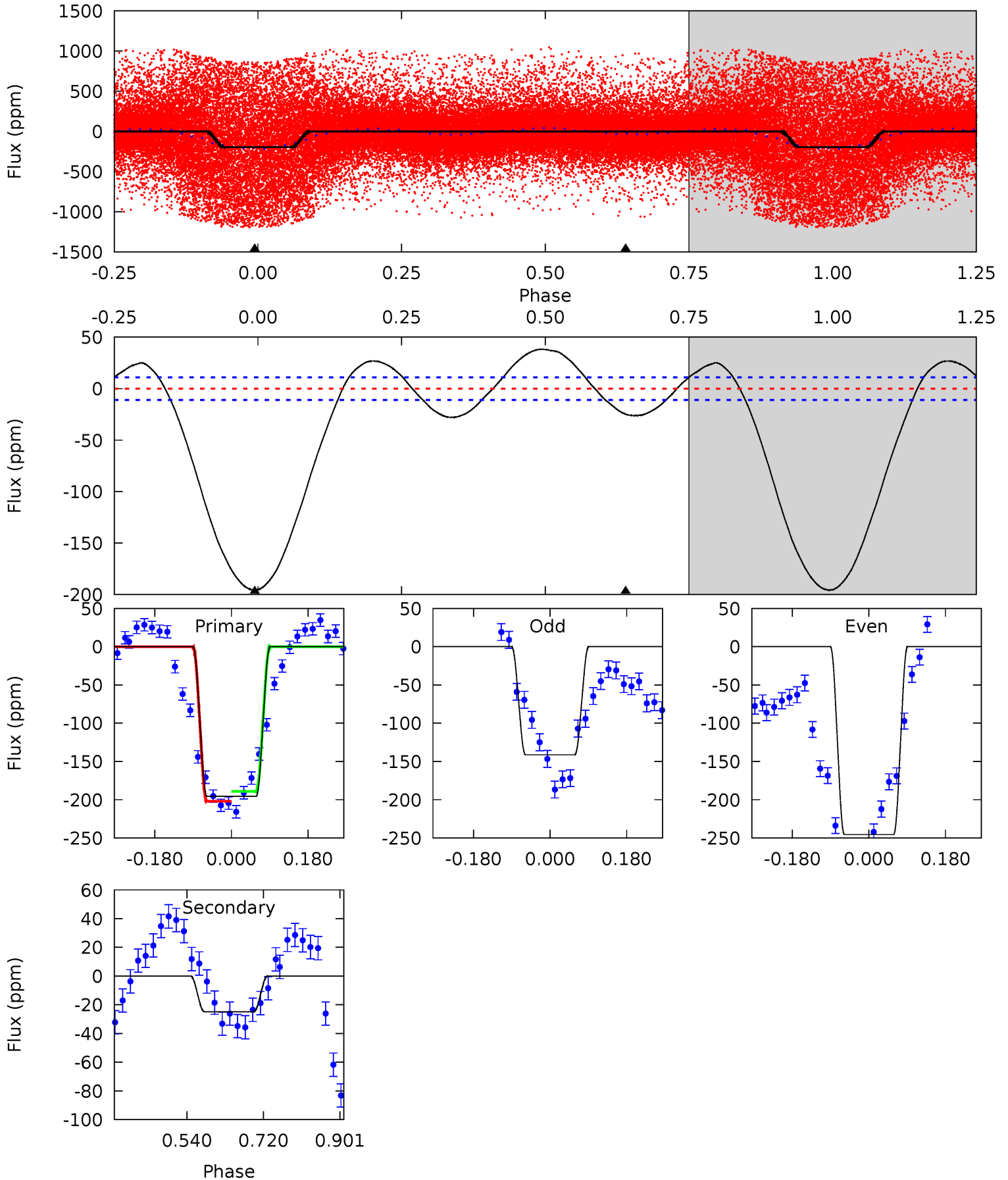
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.08	-6.56	0	0	4.38	1.19	4.26	6.08	6.08	-6.56	-6.56	1.22	1.80	0.58	2.10



Alt Model-Shift Uniqueness Test

005706866-01, P = 0.931486 Days, E = 130.680950 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
79.0	10.0	0	0	4.44	1.34	8.01	79.0	79.0	10.0	10.0	20.2	0.15	0.16	2.49



Stellar Parameters For KIC 005706866

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7066^{+172}_{-246}	$3.832^{+0.285}_{-0.095}$	$-0.140^{+0.250}_{-0.300}$	$2.618^{+0.473}_{-0.879}$	$1.697^{+0.156}_{-0.365}$	$0.133^{+0.242}_{-0.049}$
	+2%/-3%	+7%/-2%	+179%/-214%	+18%/-34%	+9%/-22%	+182%/-36%
Source	PHO1	FLK73	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 005706866-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	41 ± 6	$1.50^{+0.42}_{-0.38}$	4631^{+287}_{-421}	-7726^{+860}_{-1397}	$-4.782^{+1.818}_{-3.955}$
Alt.	-25 ± 2	$2.82^{+0.53}_{-0.52}$	4634^{+281}_{-380}	4506^{+406}_{-375}	$0.836^{+0.409}_{-0.239}$

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

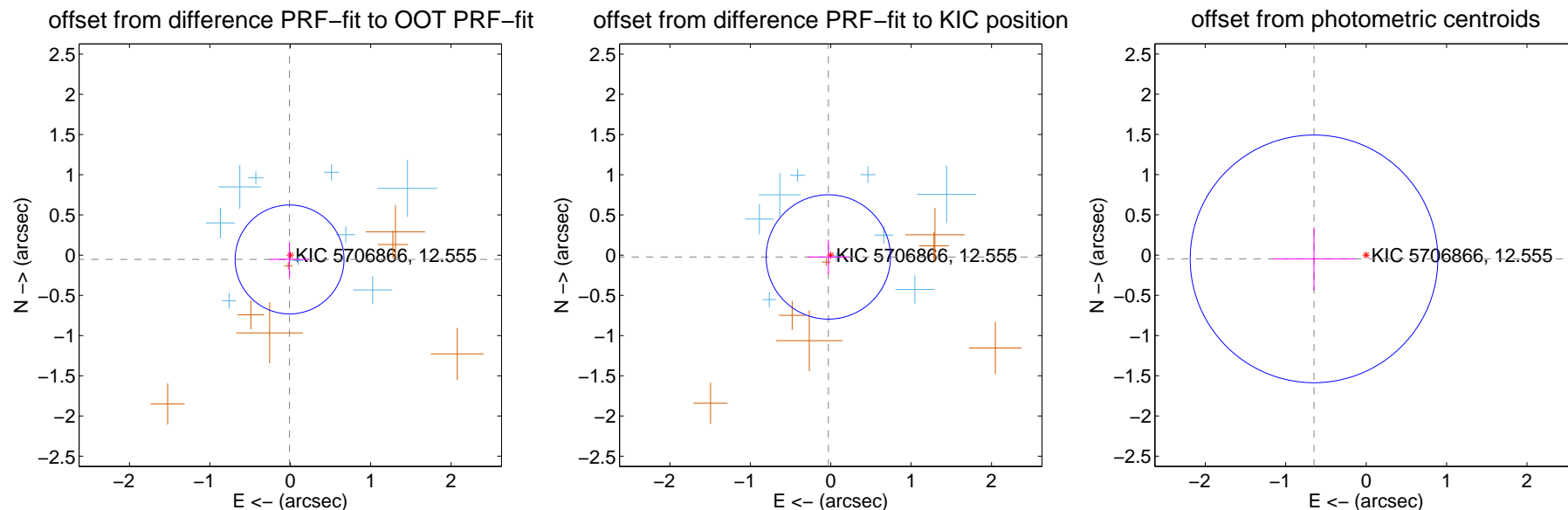
DV Centroid Data

Supplemental centroid analysis for 005706866-01. Kepler magnitude: 12.55. Transit SNR 6.65

There are 9 quarters with good PRF difference image offsets

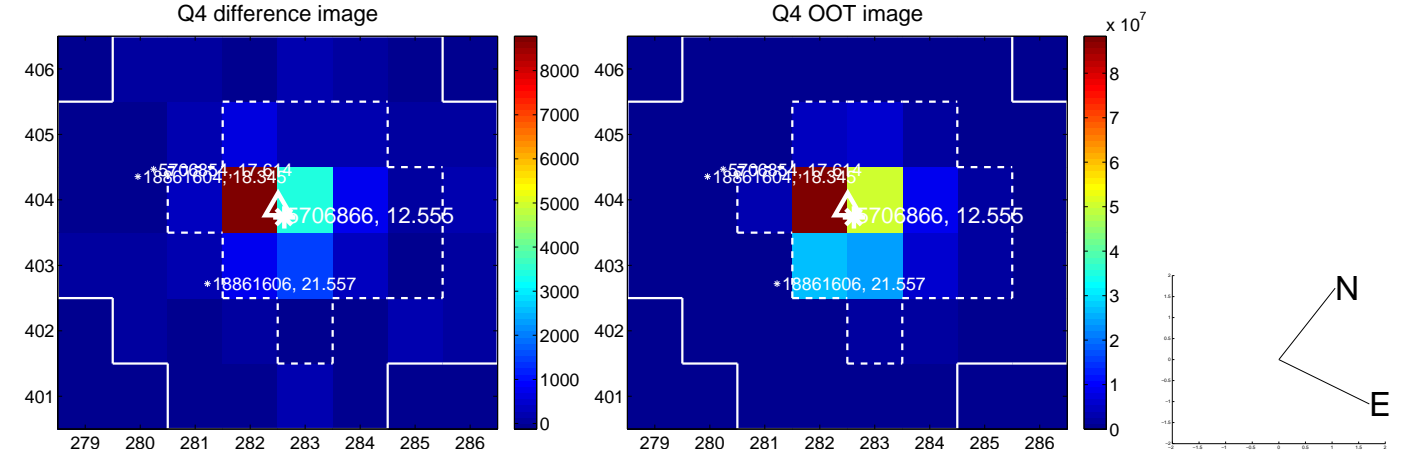
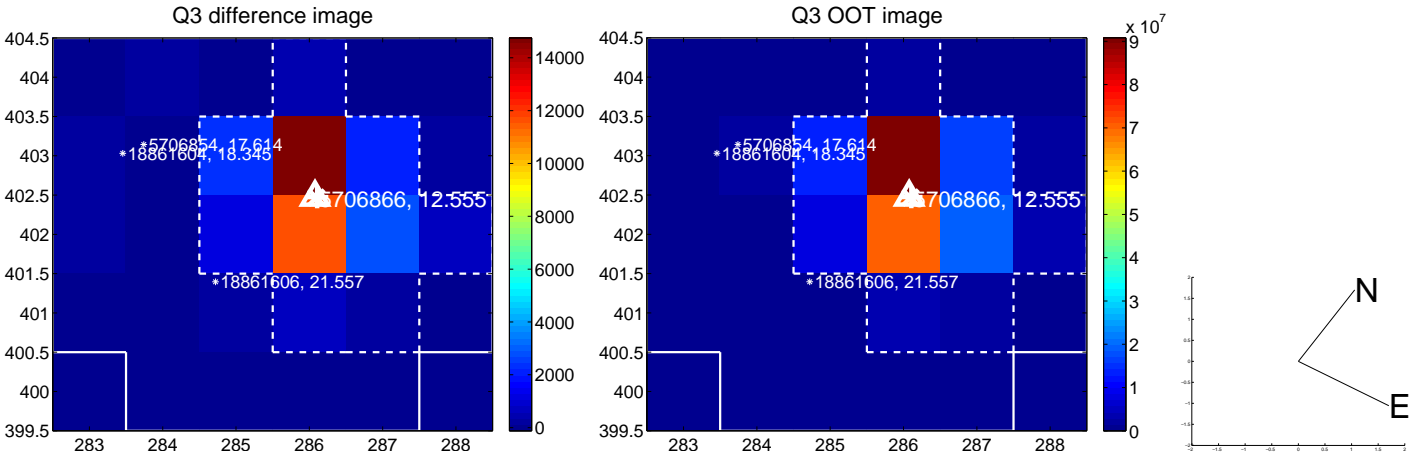
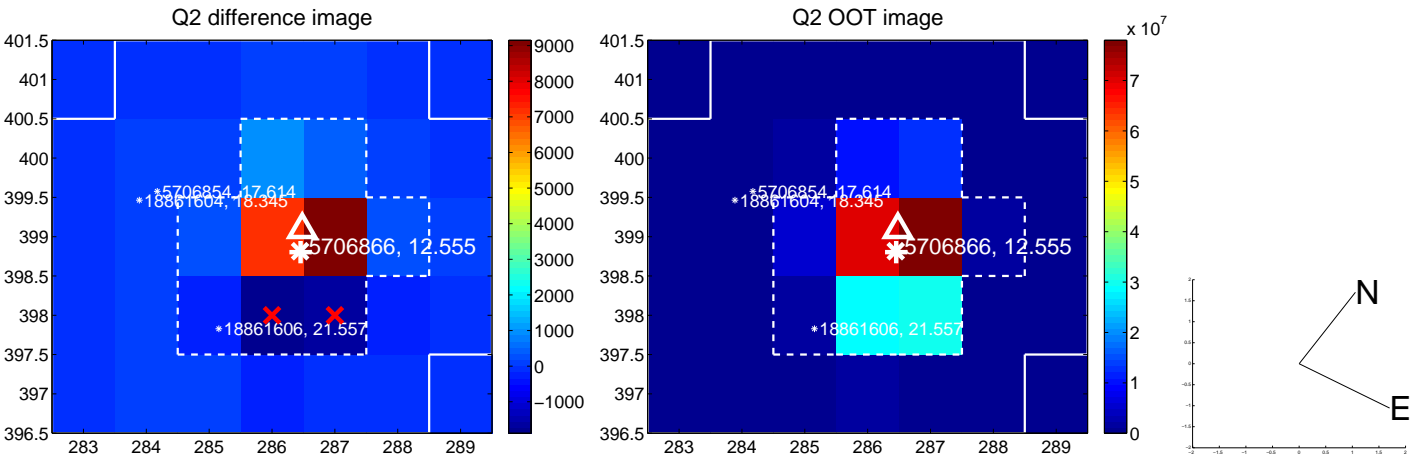
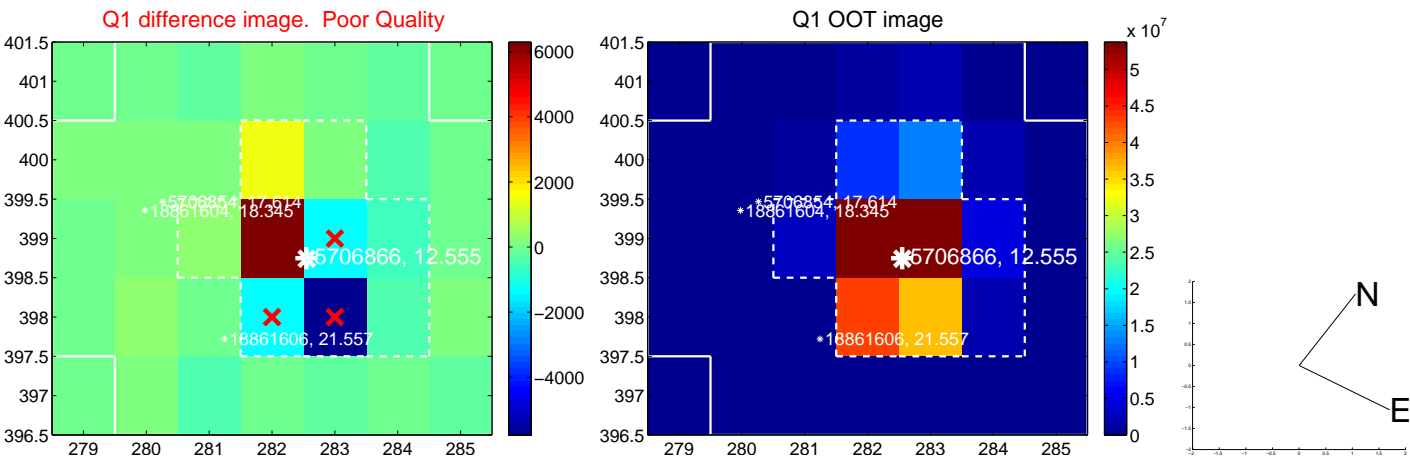
The direct PRF centroid is offset from the target star catalog position by about 0.02 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.054 ± 0.226	0.24	0.009 ± 0.243	-0.053 ± 0.218
PRF-fit source offset from KIC position	0.037 ± 0.258	0.14	0.030 ± 0.256	-0.022 ± 0.216
photometric centroid source offset	0.65 ± 0.51	1.27	0.65 ± 0.51	-0.05 ± 0.39

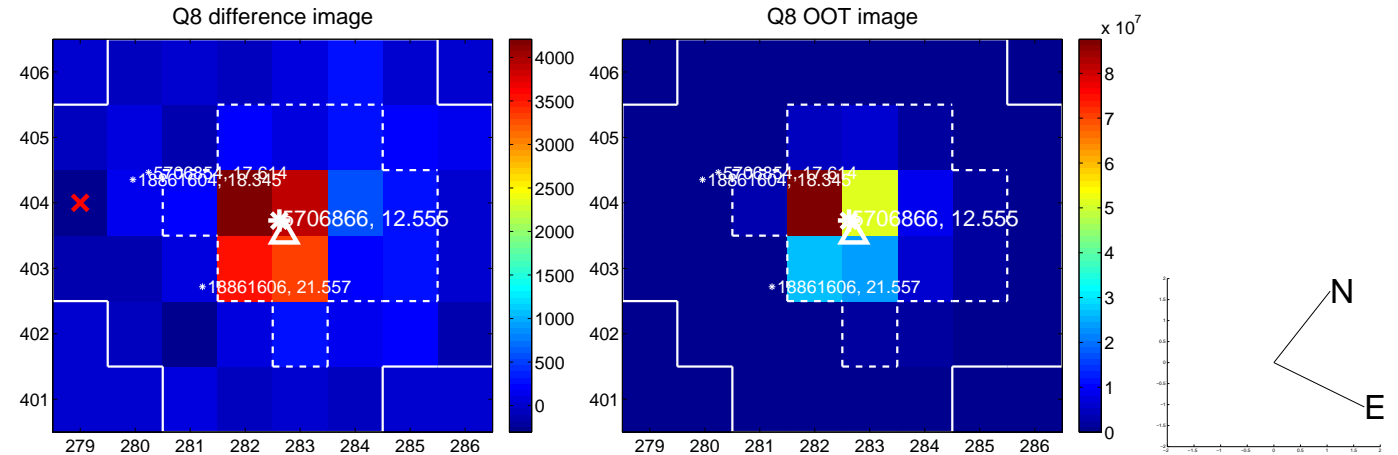
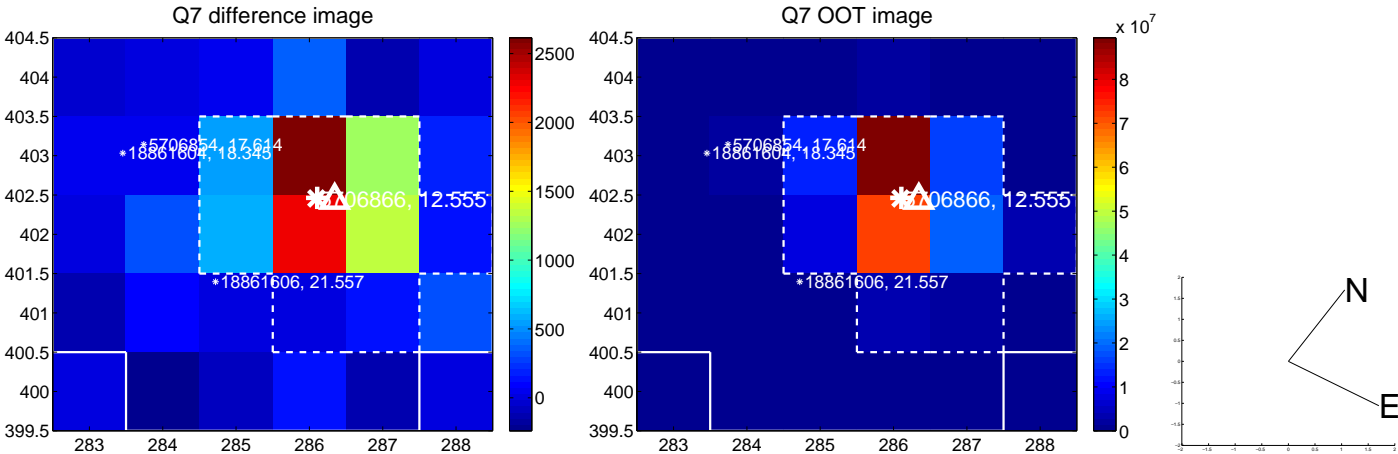
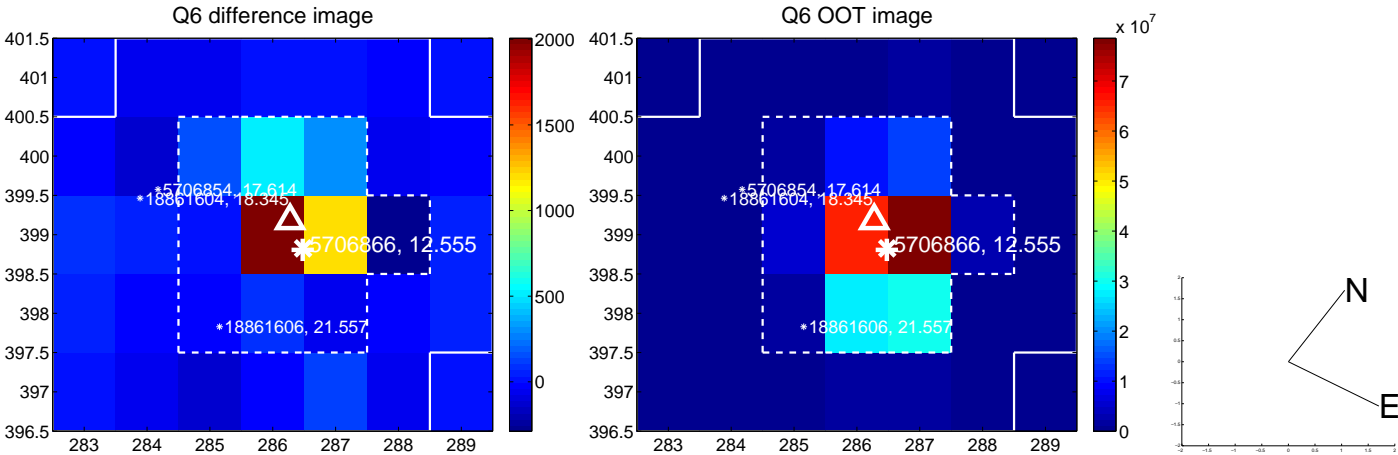
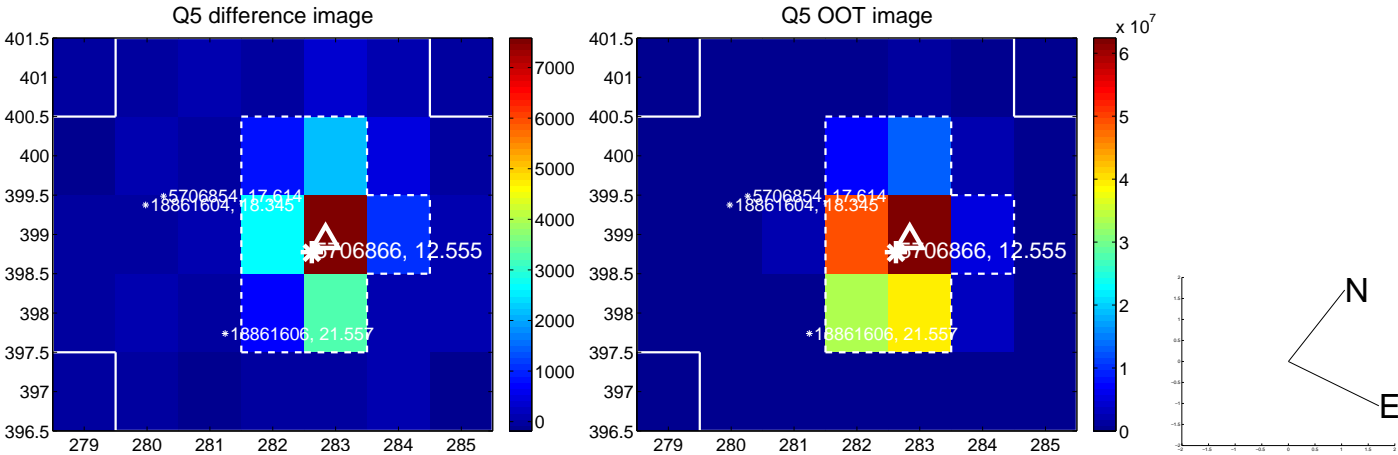


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

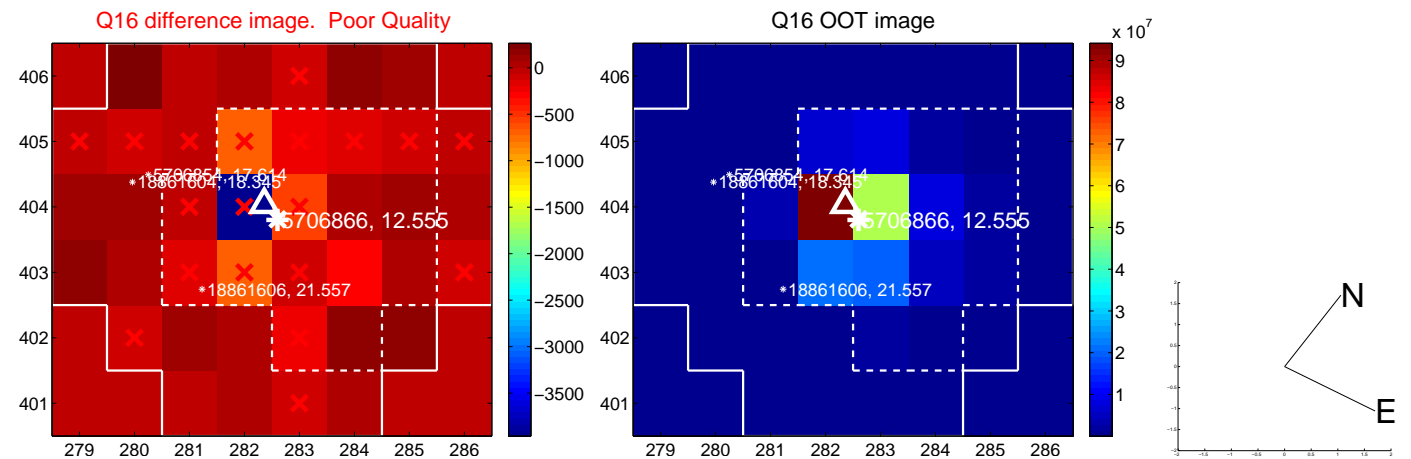
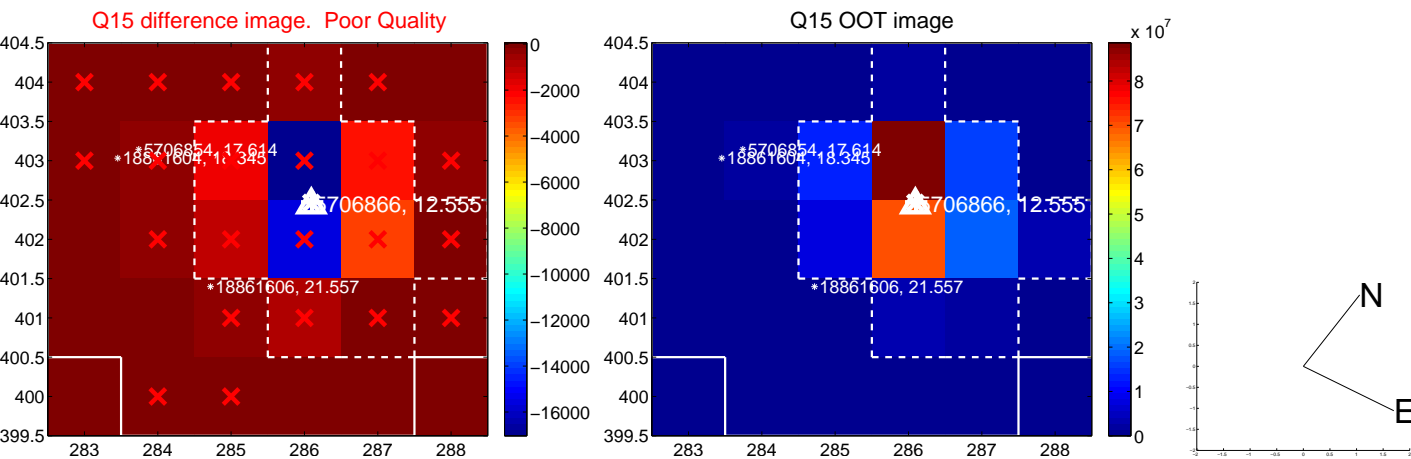
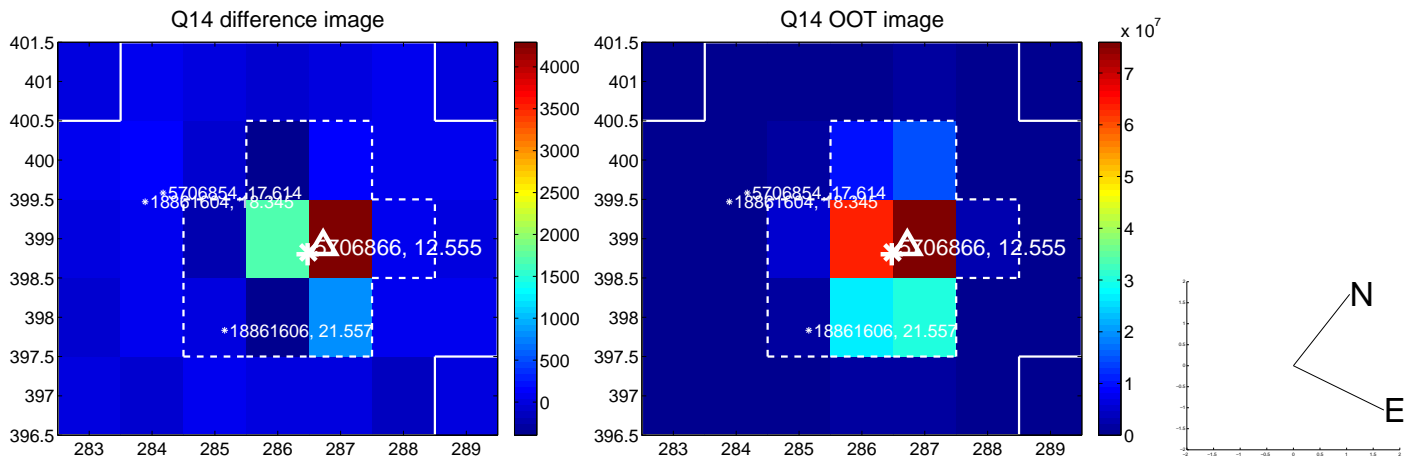
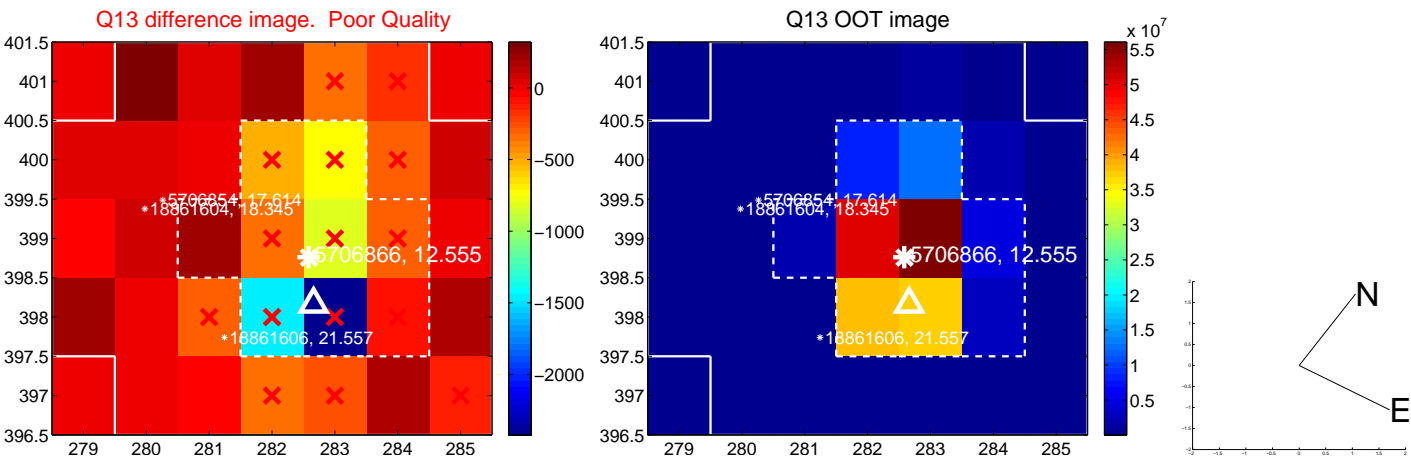
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



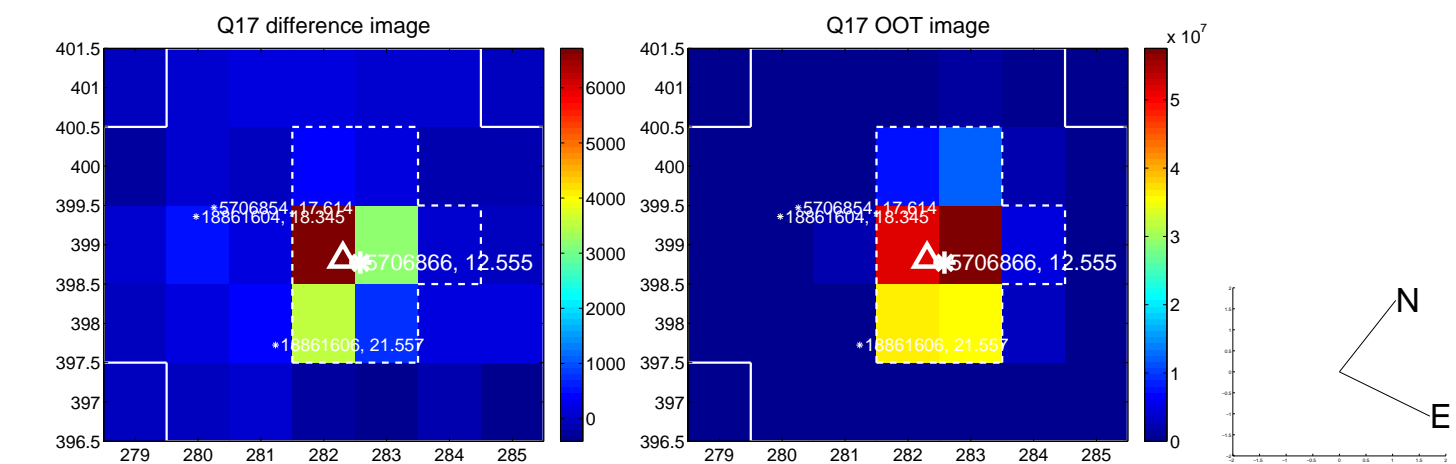
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



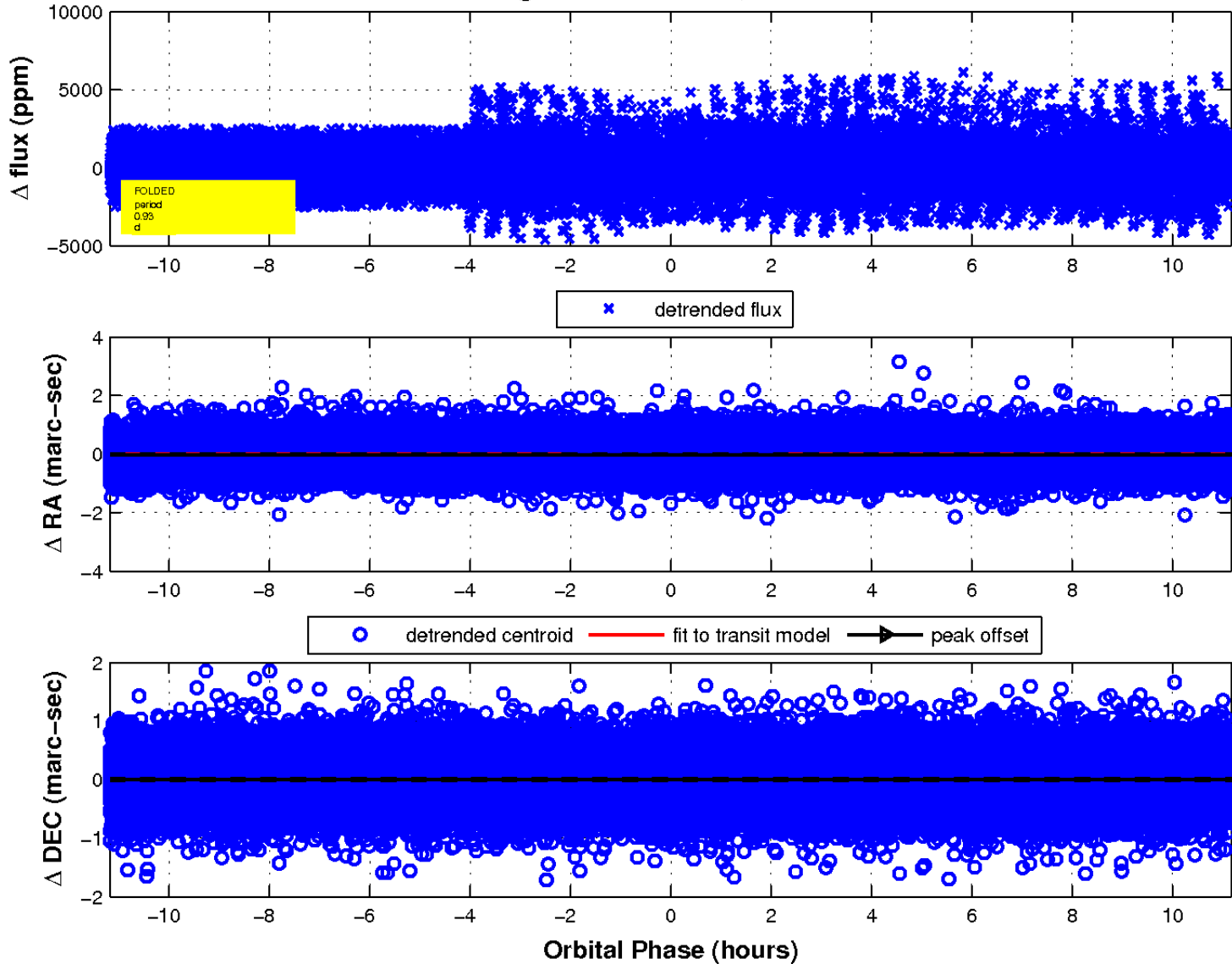
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



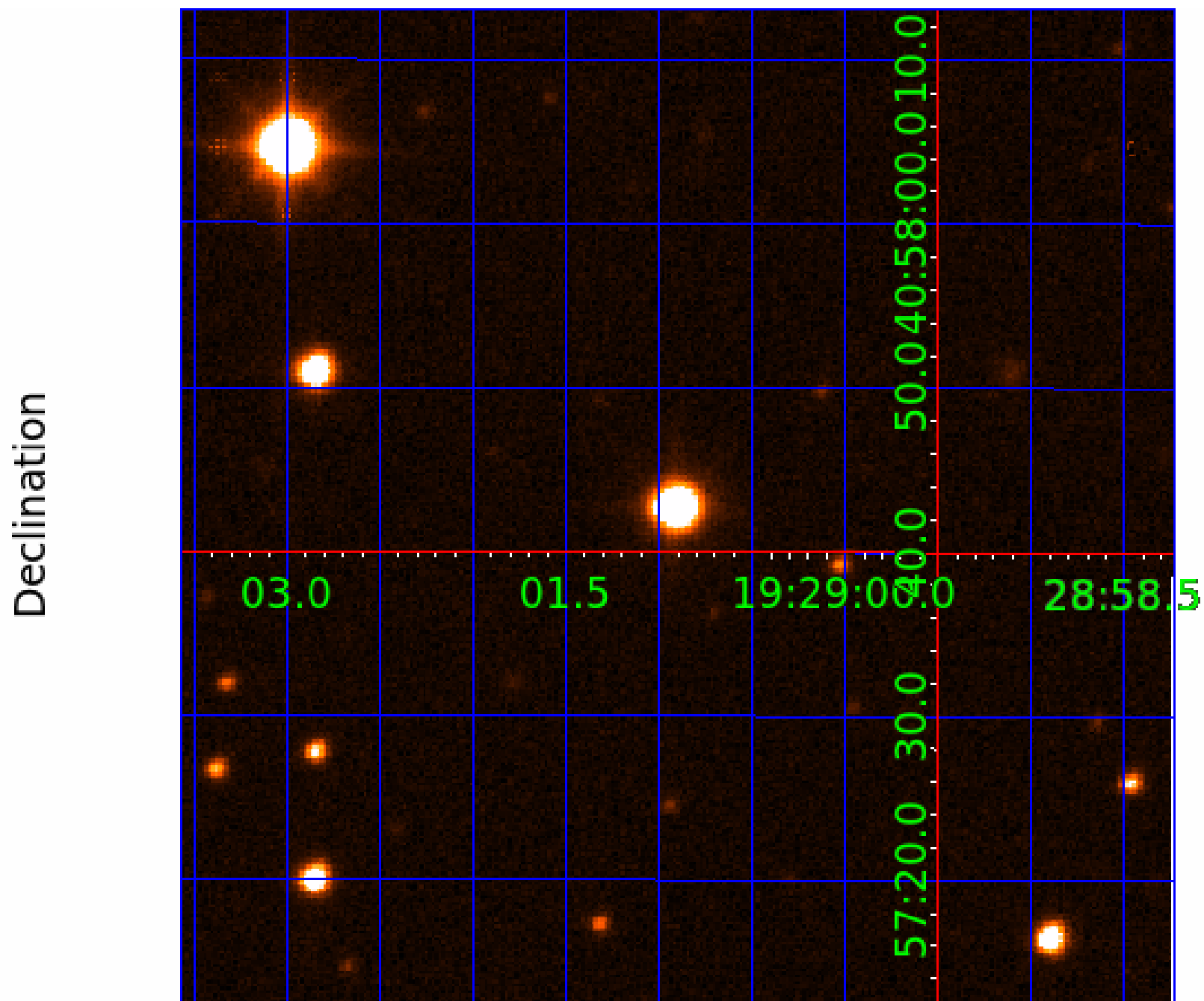
white \times : KIC target position; $+$: OOT centroid; Δ : difference centroid. red \times : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 2



UKIRT Image



KIC 005706866

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
005706866-01	OBS	No	0.931459	131.629490	27.4	4.734	9.8	6.6	2.62	7066	1.60	30856.77
005706866-02	OBS	No	0.931466	131.827554	92.9	9.538	11.9	10.5	2.62	7066	2.63	30856.47

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005706866-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV
005706866-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

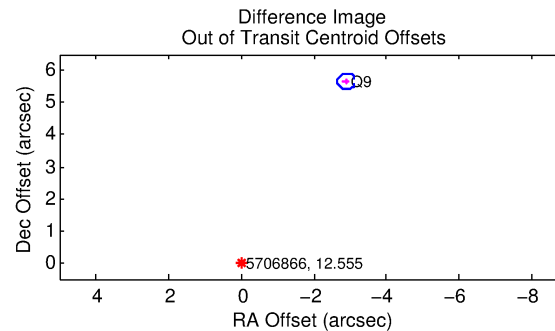
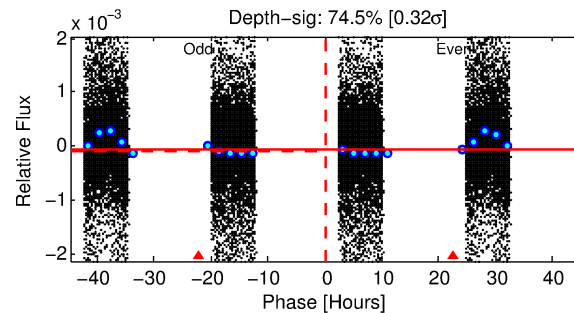
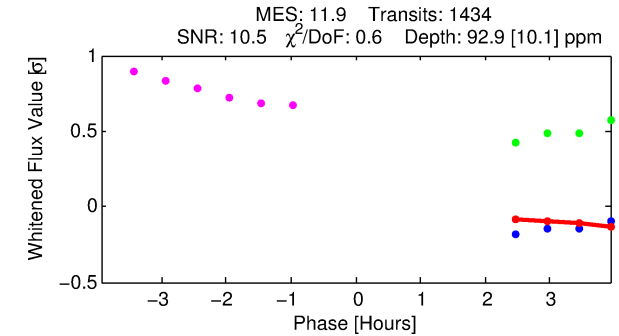
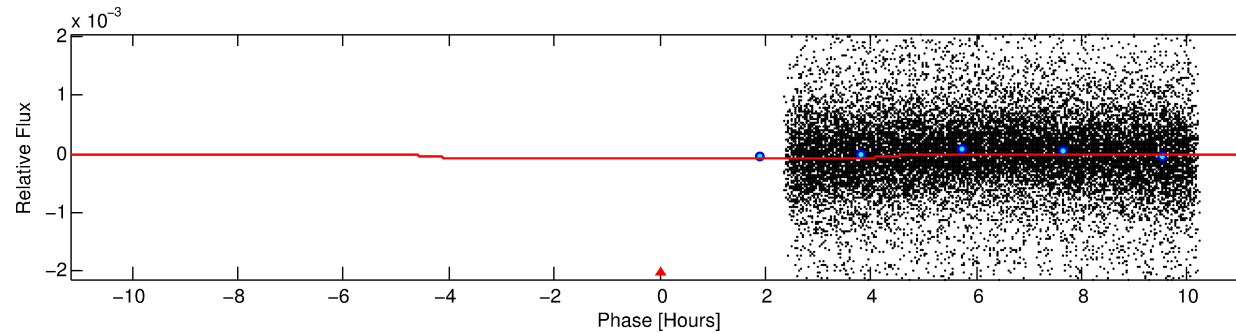
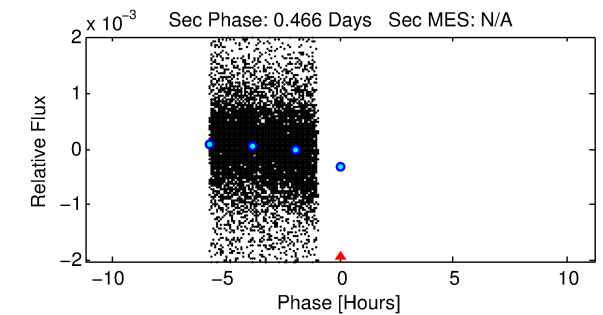
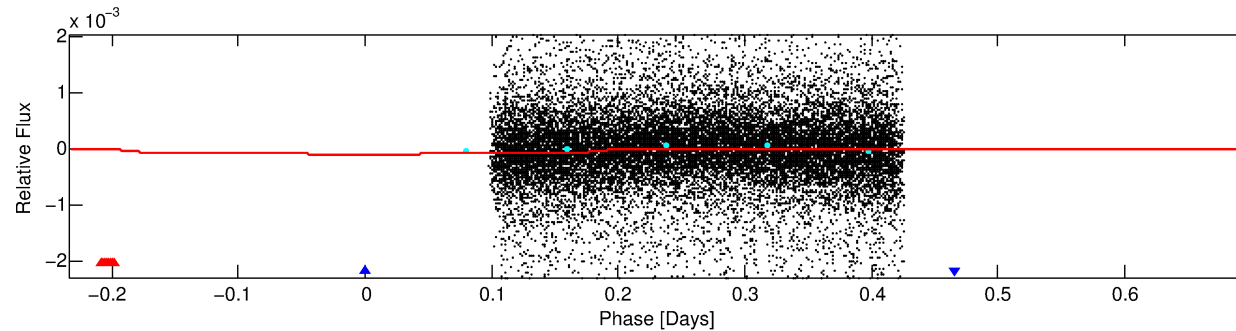
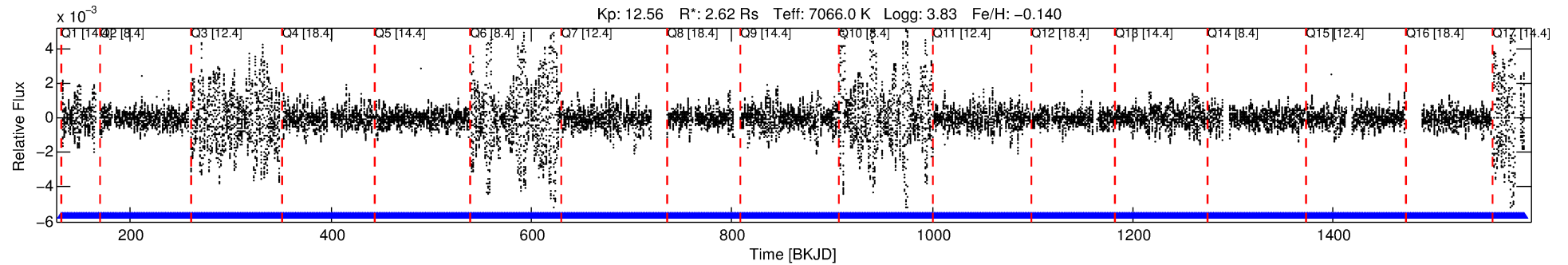
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005706866-02

No Significant Match Found

DV One-Page Summary

KIC: 5706866 Candidate: 2 of 2 Period: 0.931 d



DV Fit Results:

Period = 0.93147 [0.00001] d
Epoch = 131.8276 [0.0255] BKJD
Rp/R* = 0.0092 [0.0026]
a/R* = 1.03 [0.12]
b = 0.57 [1.96]
Seff = 30856.47 [15760.79]
Teq = 3380 [432] K
Rp = 2.63 [1.16] Re
a = 0.0223 [0.0070] AU

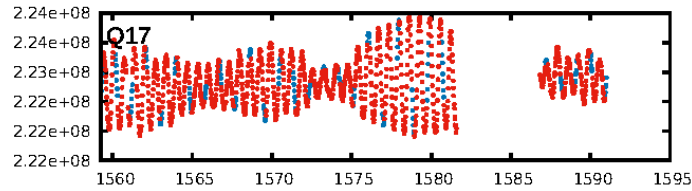
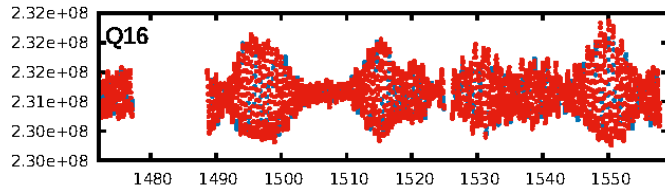
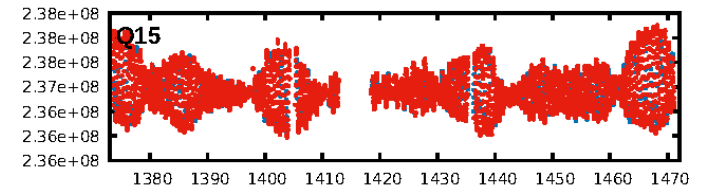
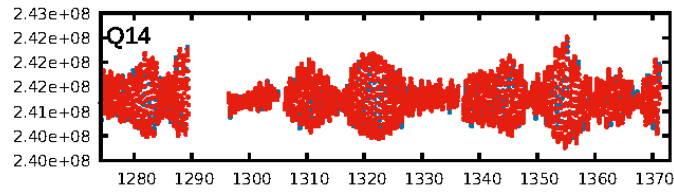
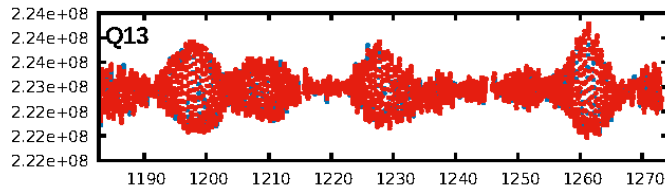
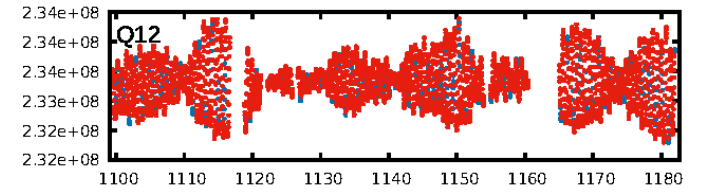
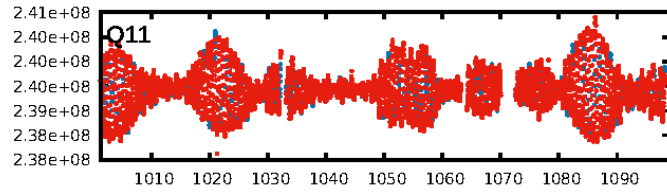
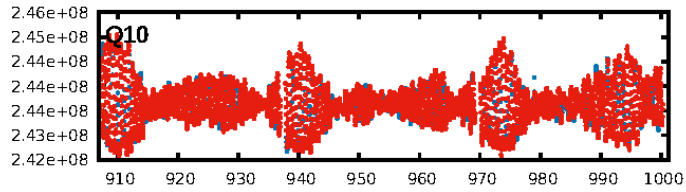
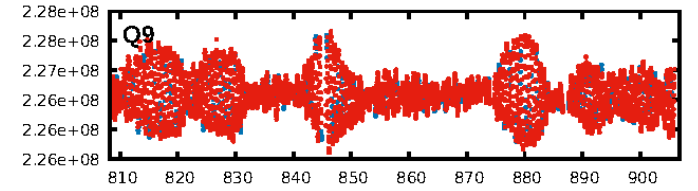
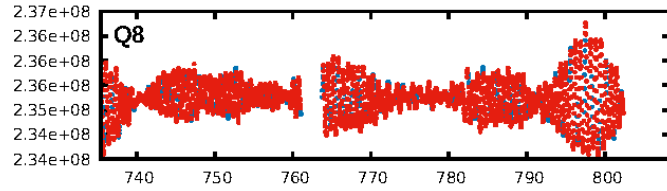
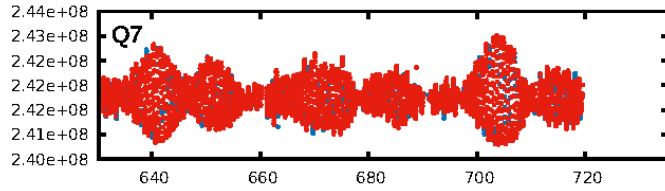
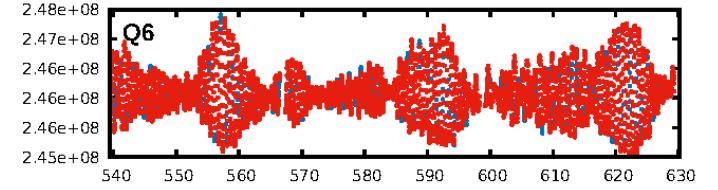
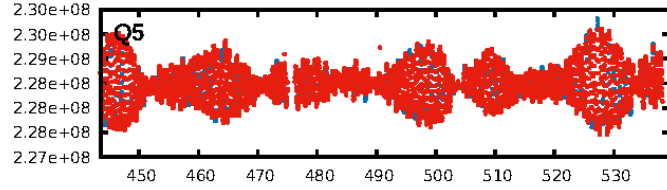
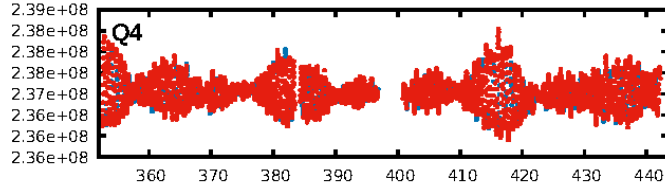
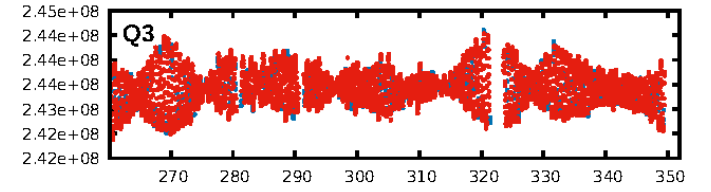
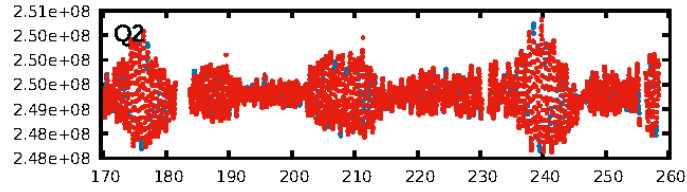
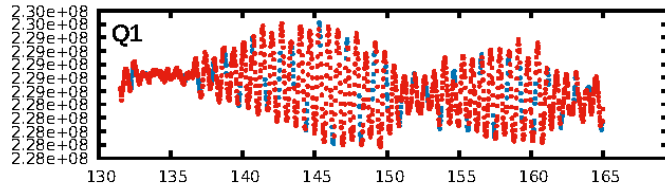
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGoF-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [1369/1369]
GhostDiagnostic-chr: -16.92
Centroid-sig: 70.9%
Centroid-so: 0.119 arcsec [1.23 σ]
OotOffset-rm: 6.355 arcsec [77.55 σ]
KicOffset-rm: 6.355 arcsec [77.56 σ]
OotOffset-st: 0/0/0/1 [1]
KicOffset-st: 0/0/0/1 [1]
DiffImageQuality-fgm: 0.00 [0/1]
DiffImageOverlap-fno: 0.00 [0/17]

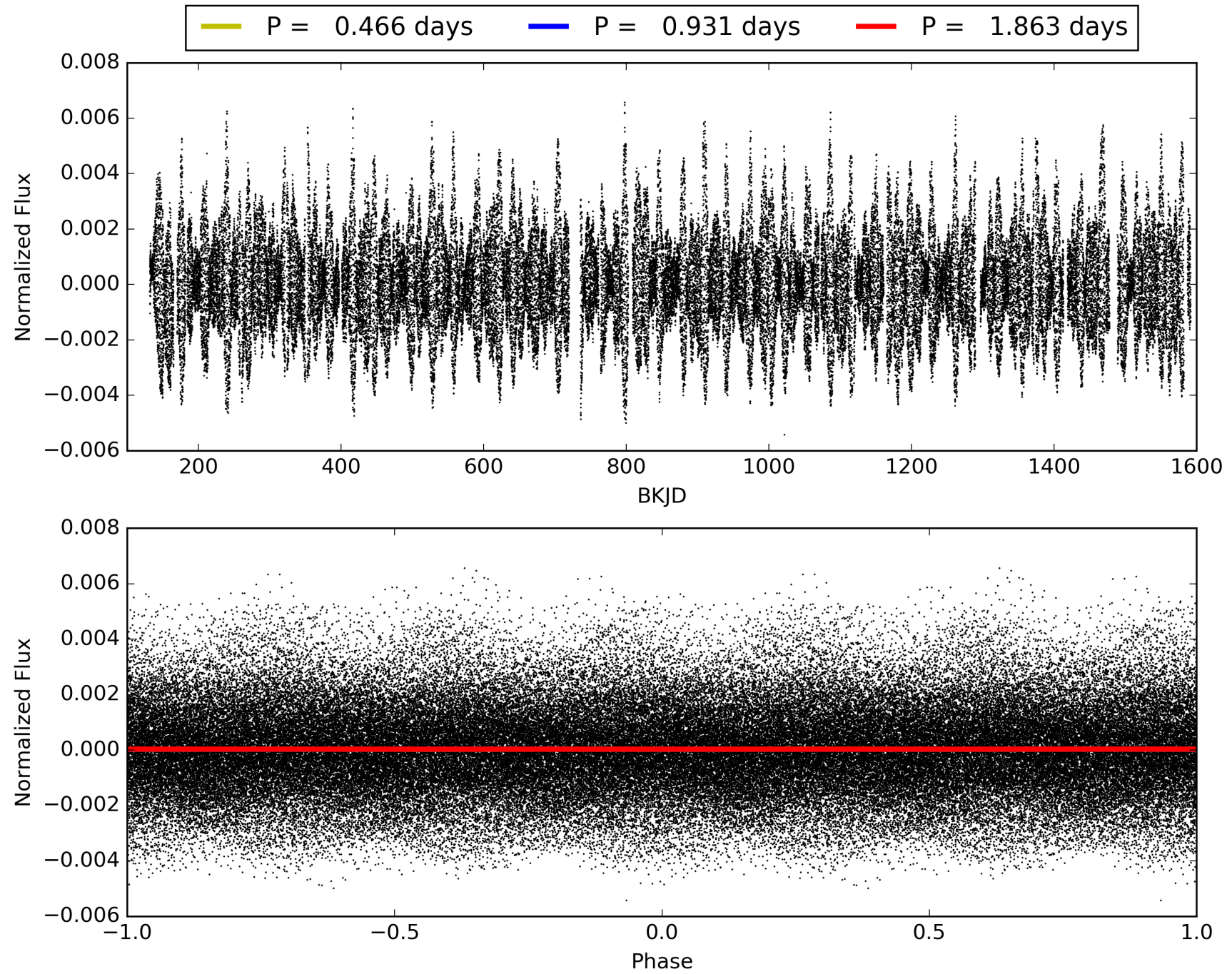
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 12:23:07 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 005706866-02, PDC Light Curves

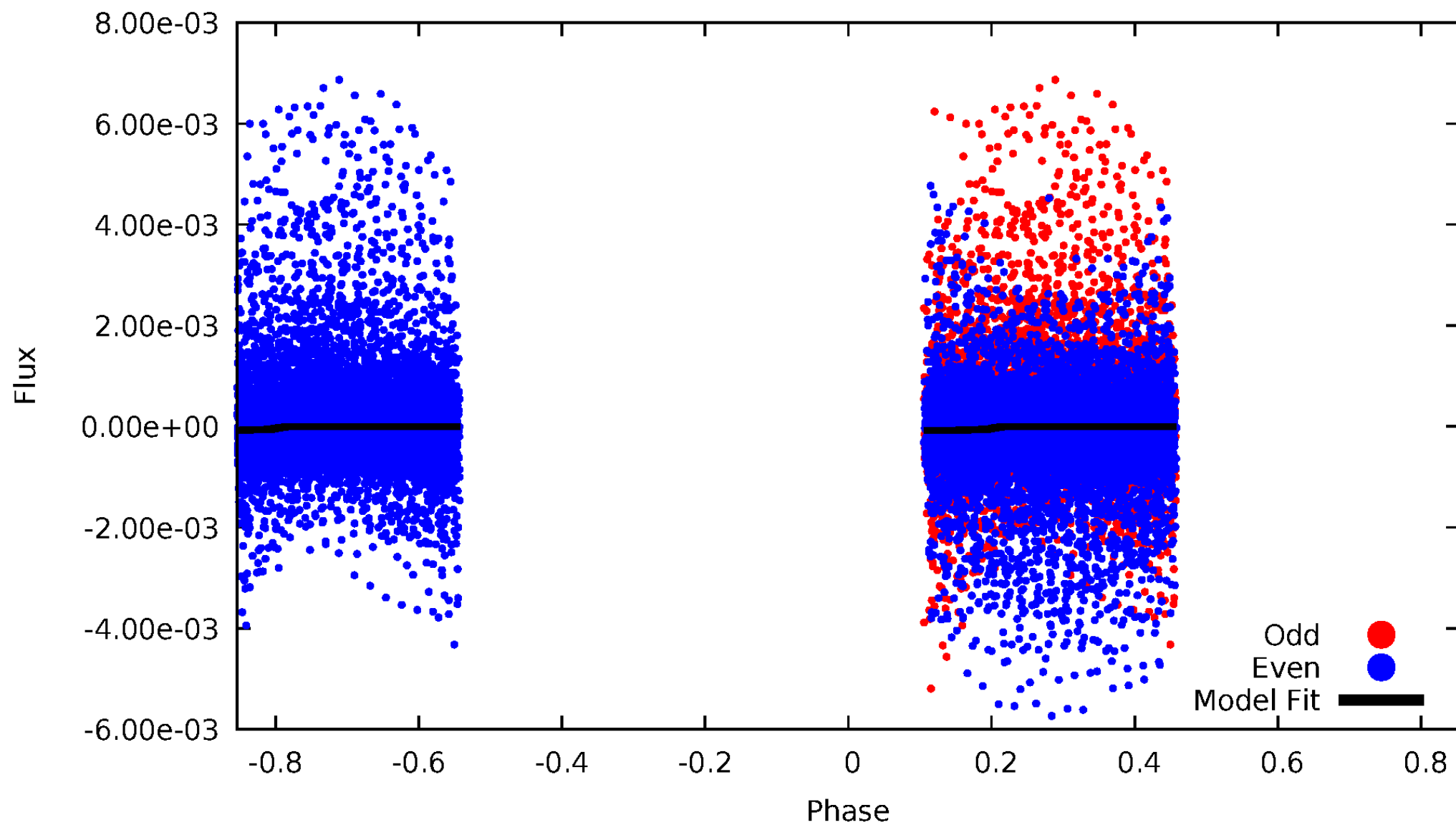


TCE 005706866-02



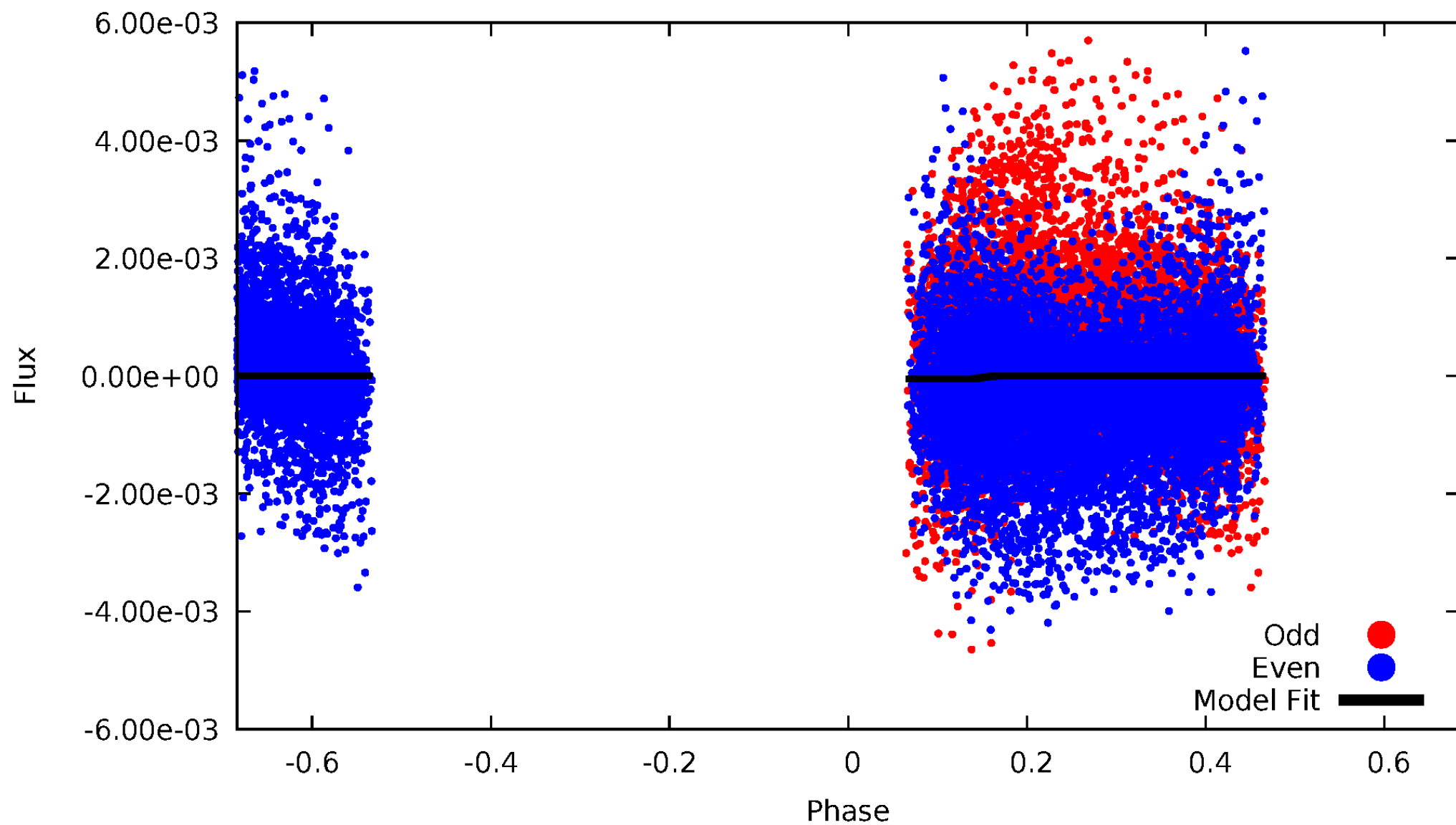
DV Odd/Even

TCE 005706866-02



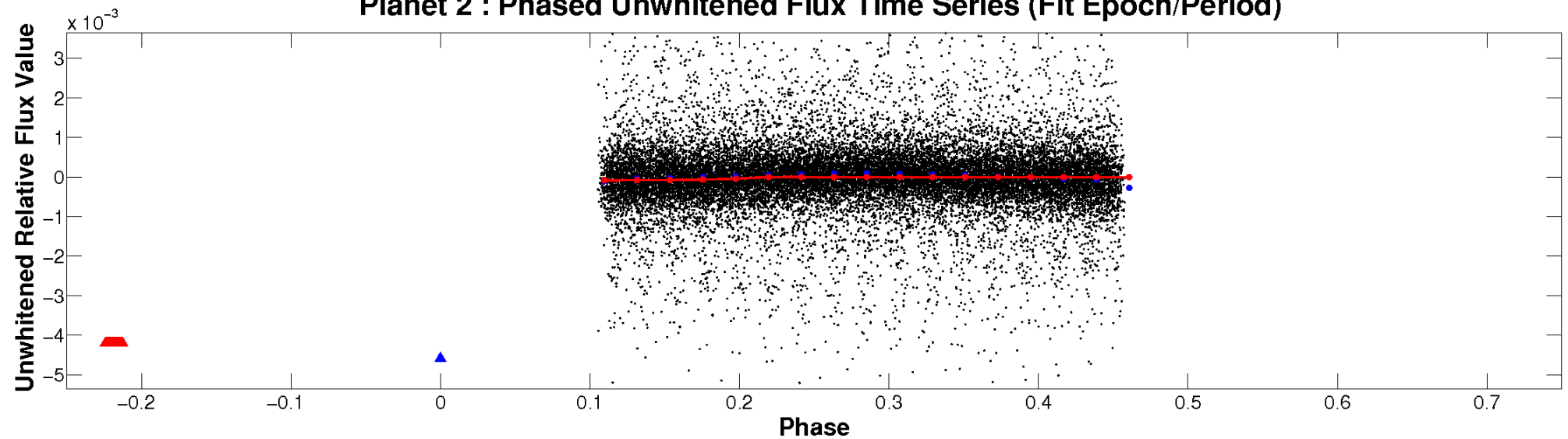
ALT Odd/Even

TCE 005706866-02

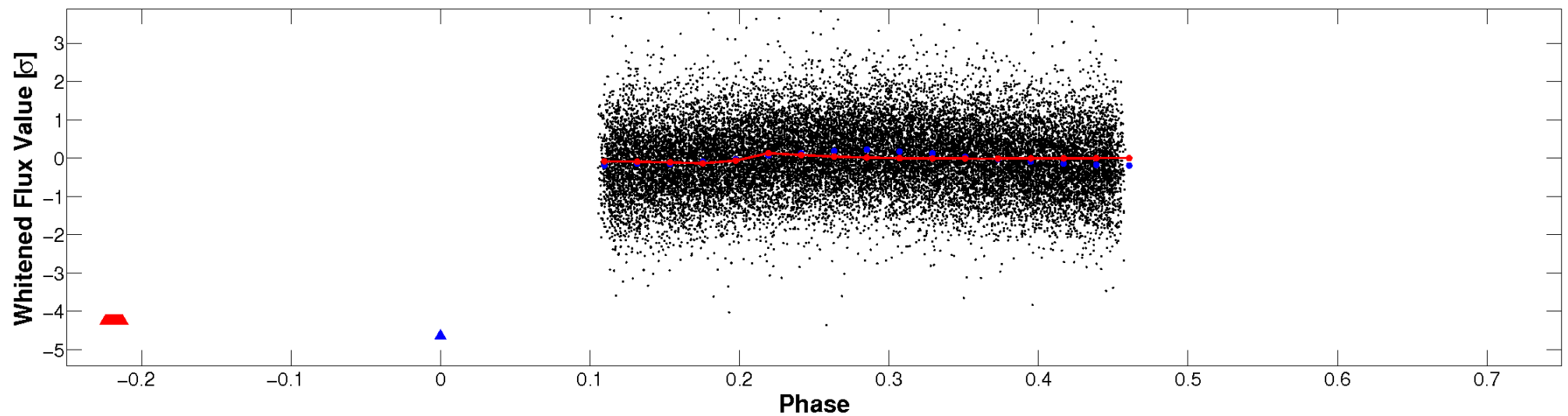


Non-Whitened Vs. Whitened Light Curve

Planet 2 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

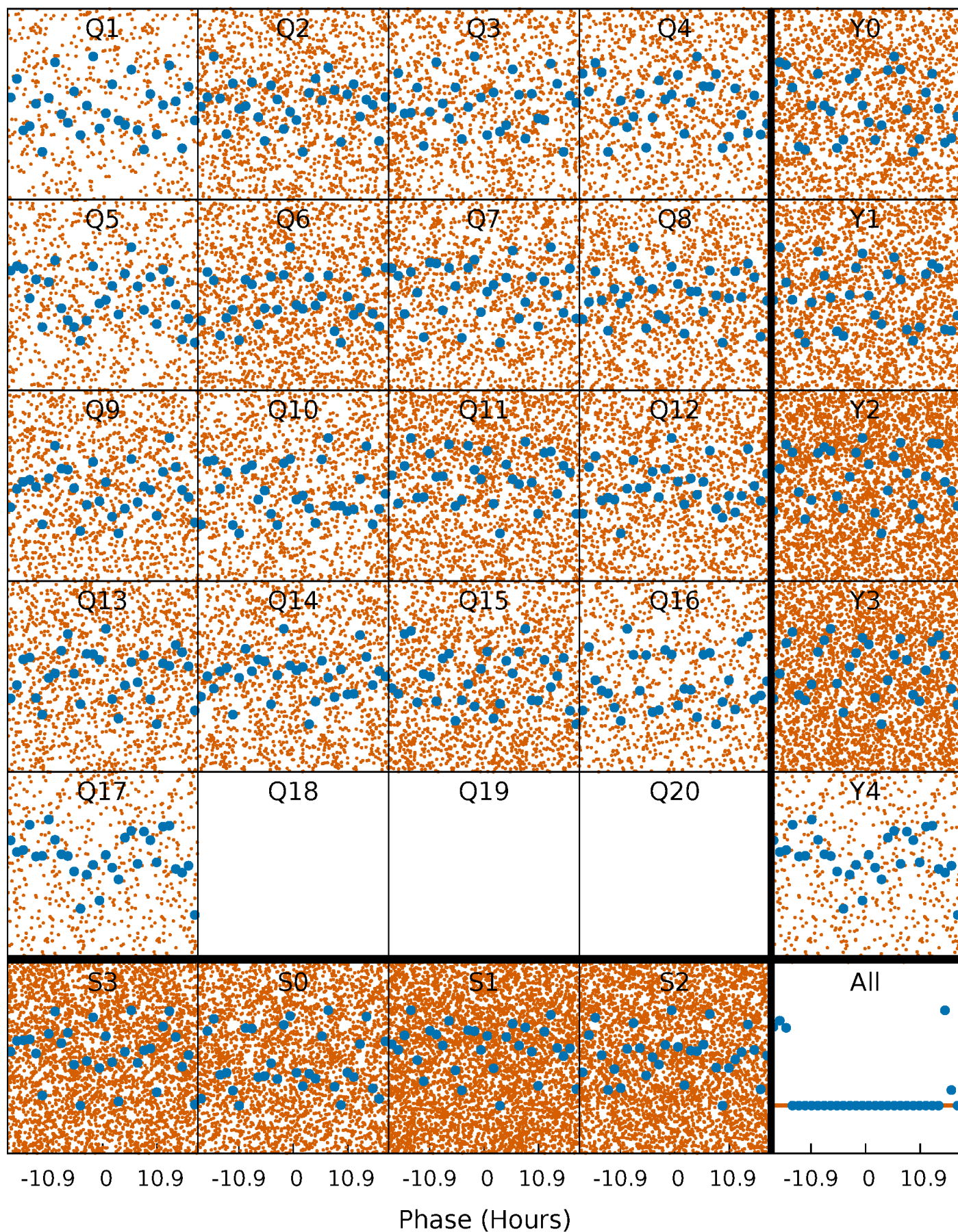


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



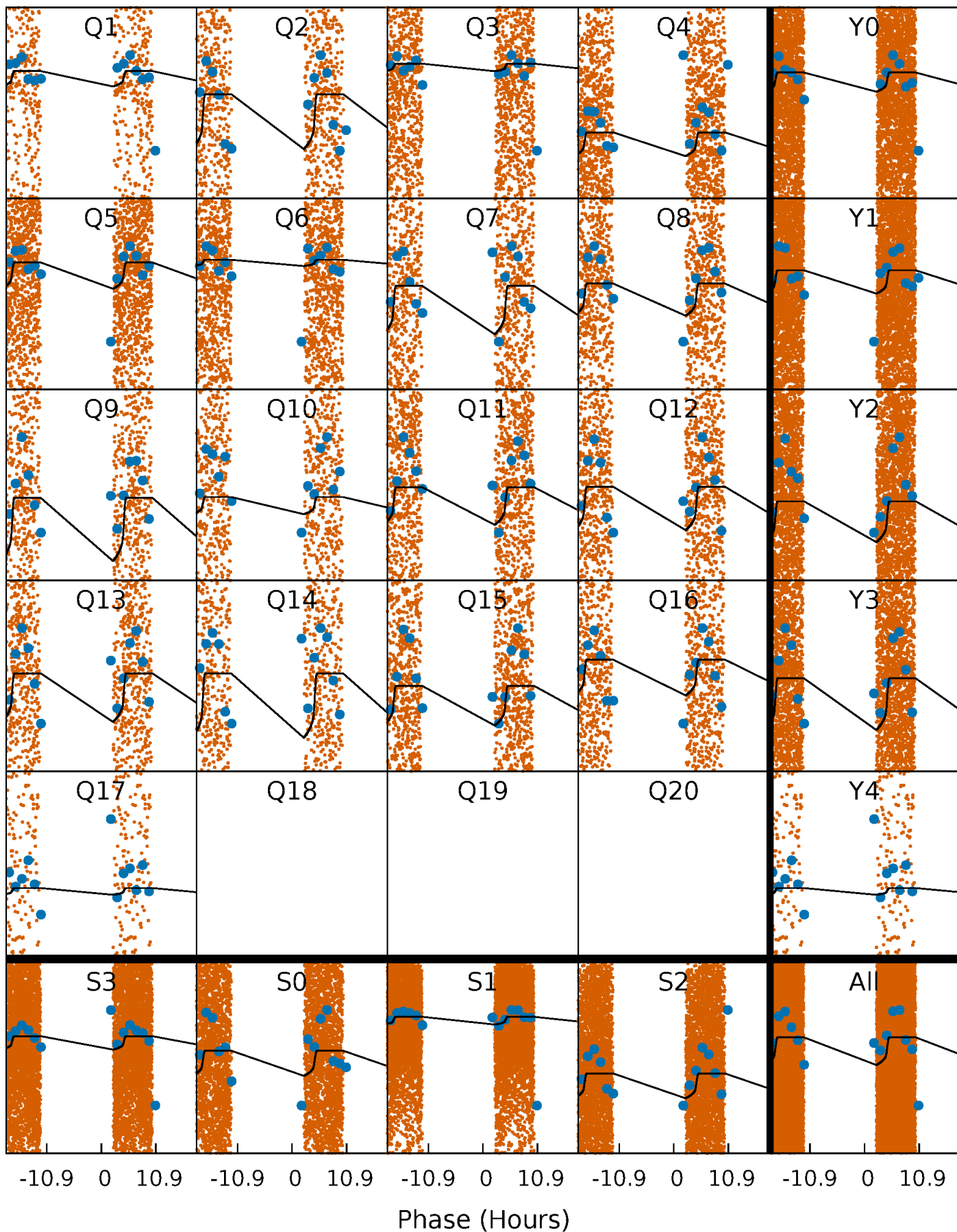
PDC Quarter-Phased Transit Curves

TCE 005706866-02 P= 0.931466 Days $T_0=131.827554$ (BKJD)



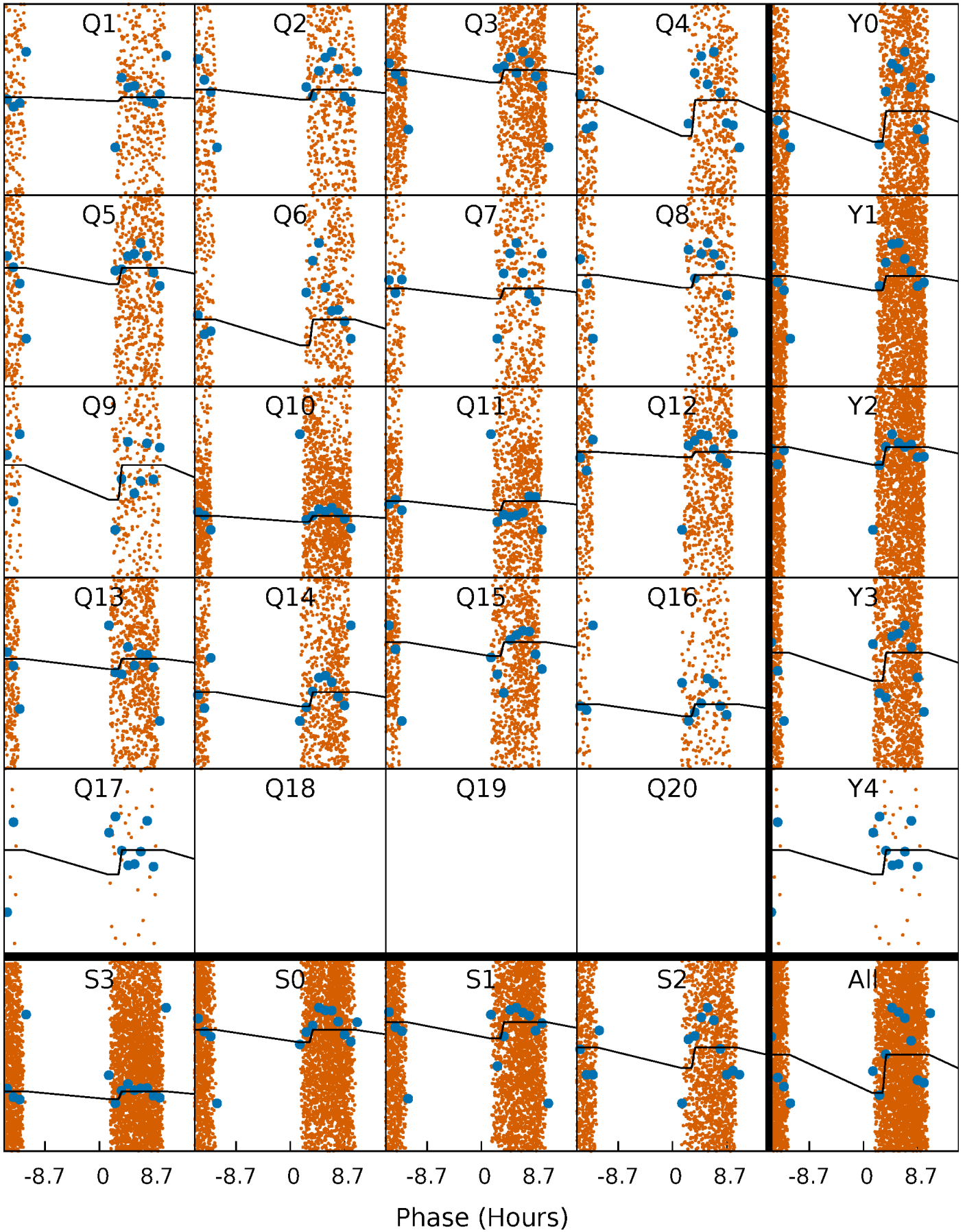
DV Quarter-Phased Transit Curves

TCE 005706866-02 P= 0.931466 Days $T_0=131.827554$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

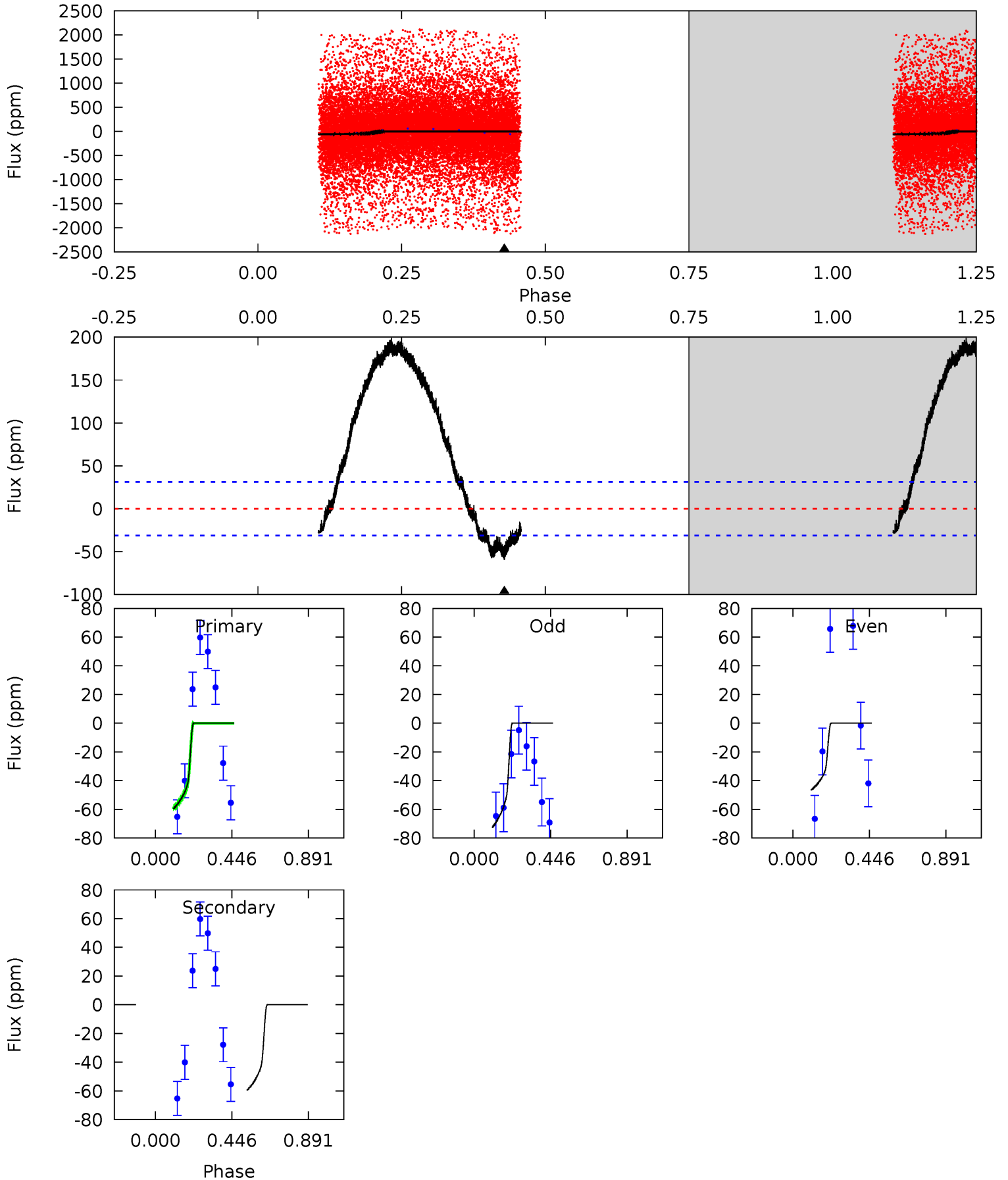
TCE 005706866-02 P= 0.931496 Days $T_0=131.818268$ (BKJD)



DV Model-Shift Uniqueness Test

005706866-02, P = 0.931466 Days, E = 131.827554 Days

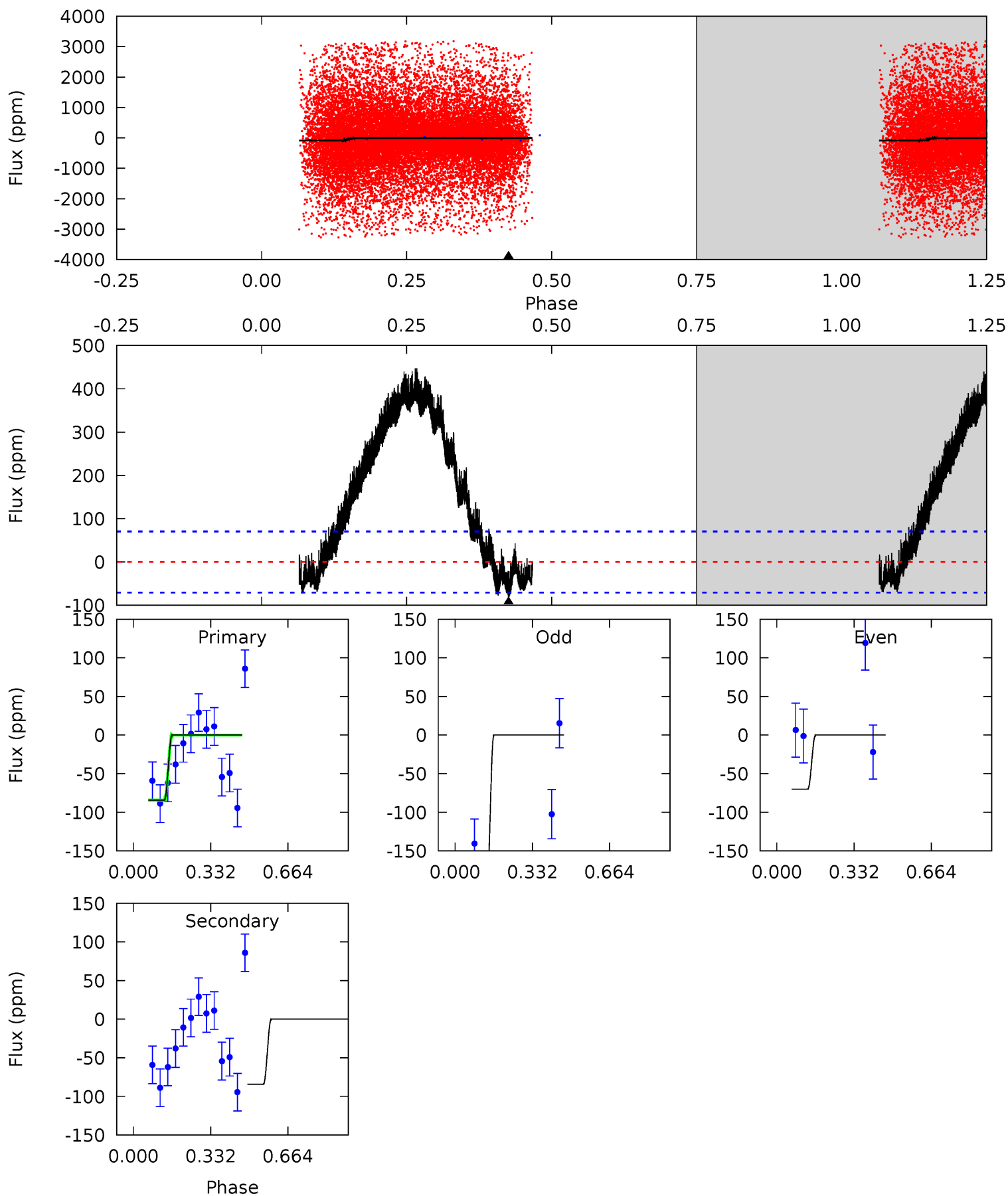
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.09	8.09	0	0	4.24	0.76	2.86	8.09	8.09	8.09	8.09	1.80	0.50	0.77	0



Alt Model-Shift Uniqueness Test

005706866-02, P = 0.931496 Days, E = 131.818268 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.14	5.14	0	0	4.31	0.97	2.07	5.14	5.14	5.14	5.14	5.52	0.36	0.84	0



Stellar Parameters For KIC 005706866

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7066^{+172}_{-246}	$3.832^{+0.285}_{-0.095}$	$-0.140^{+0.250}_{-0.300}$	$2.618^{+0.473}_{-0.879}$	$1.697^{+0.156}_{-0.365}$	$0.133^{+0.242}_{-0.049}$
	+2%/-3%	+7%/-2%	+179%/-214%	+18%/-34%	+9%/-22%	+182%/-36%
Source	PHO1	FLK73	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 005706866-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-60 ± 7	$2.41^{+0.86}_{-0.73}$	4627^{+260}_{-426}	6230^{+1484}_{-885}	$2.754^{+2.962}_{-1.265}$
Alt.	-84 ± 16	$1.91^{+0.84}_{-0.73}$	4617^{+268}_{-401}	7887^{+2959}_{-1384}	$6.028^{+9.284}_{-3.089}$

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

DV Centroid Data

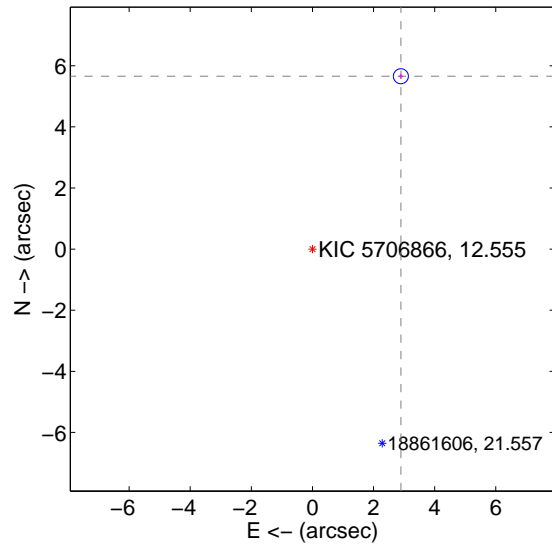
Supplemental centroid analysis for 005706866-02. Kepler magnitude: 12.55. Transit SNR 10.47

There are 0 quarters with good PRF difference image offsets

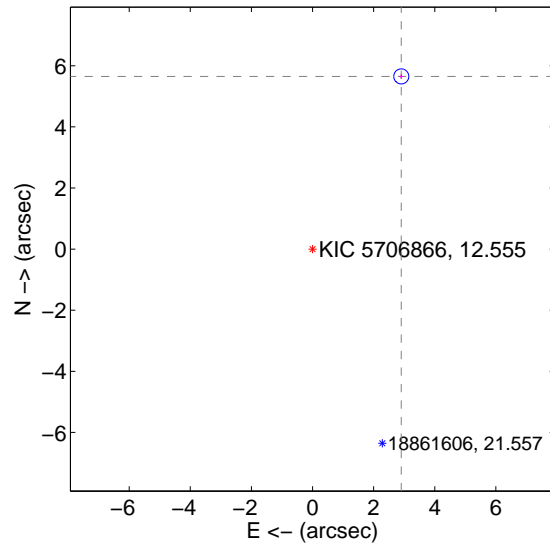
The direct PRF centroid is offset from the target star catalog position by about 0.01 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	6.355 ± 0.082	77.55	-2.894 ± 0.078	5.658 ± 0.083
PRF-fit source offset from KIC position	6.355 ± 0.082	77.56	-2.905 ± 0.078	5.652 ± 0.083
photometric centroid source offset	0.12 ± 0.10	1.23	-0.08 ± 0.11	0.09 ± 0.09

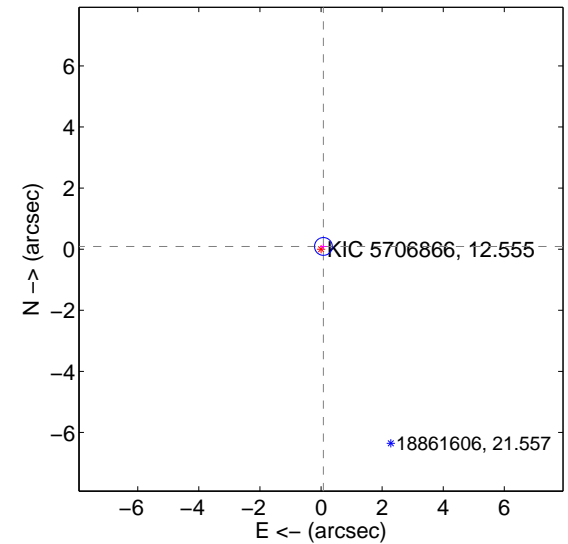
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

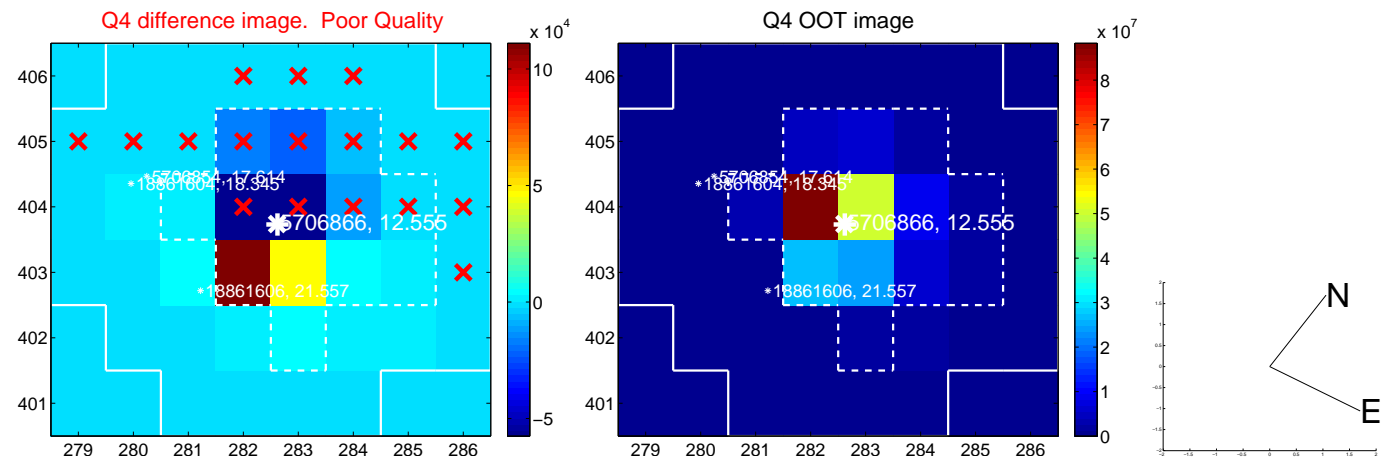
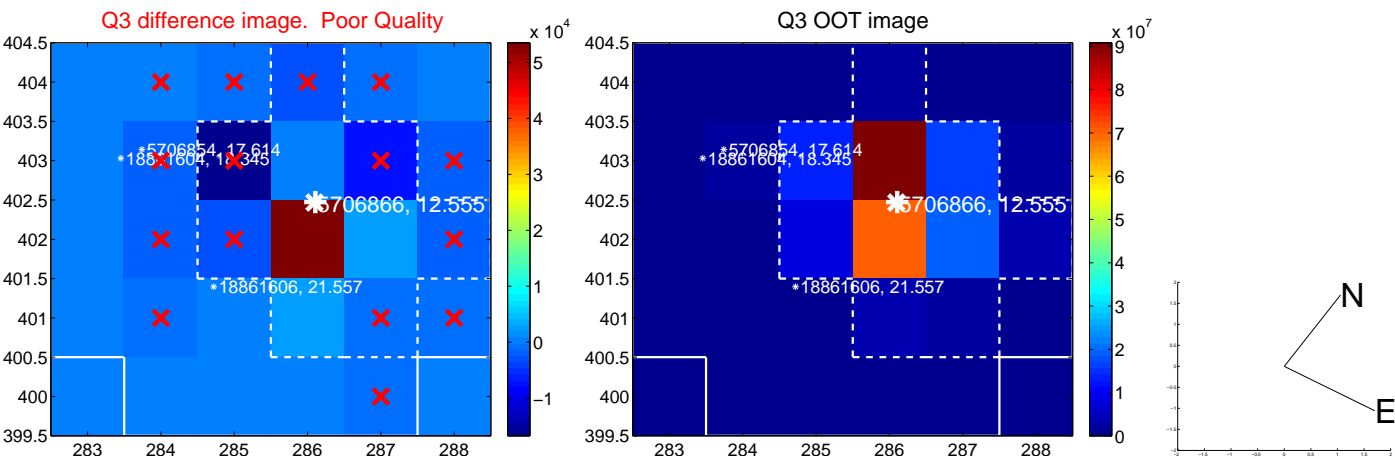
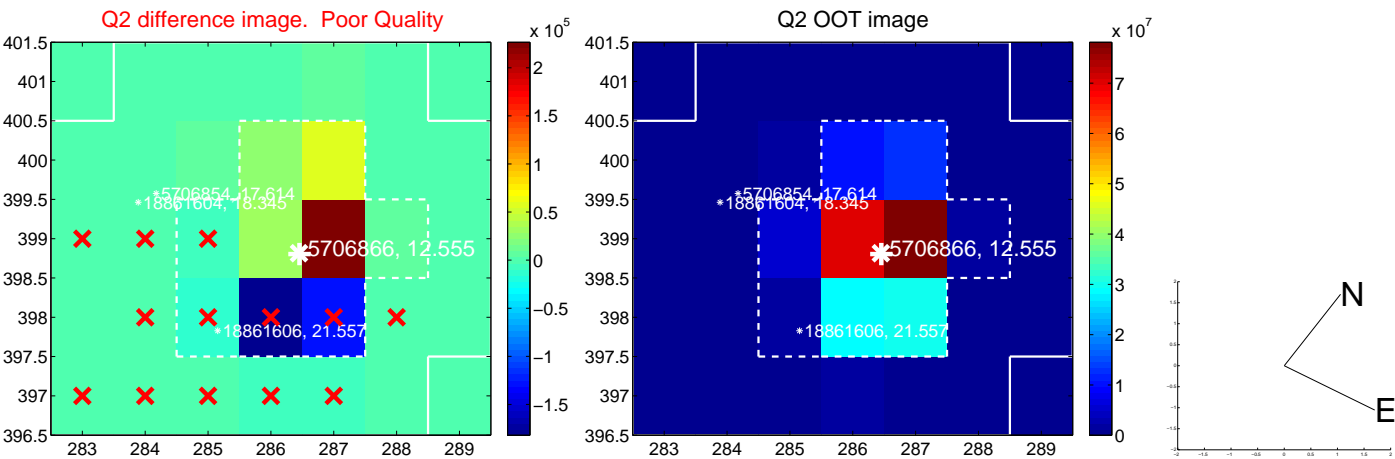
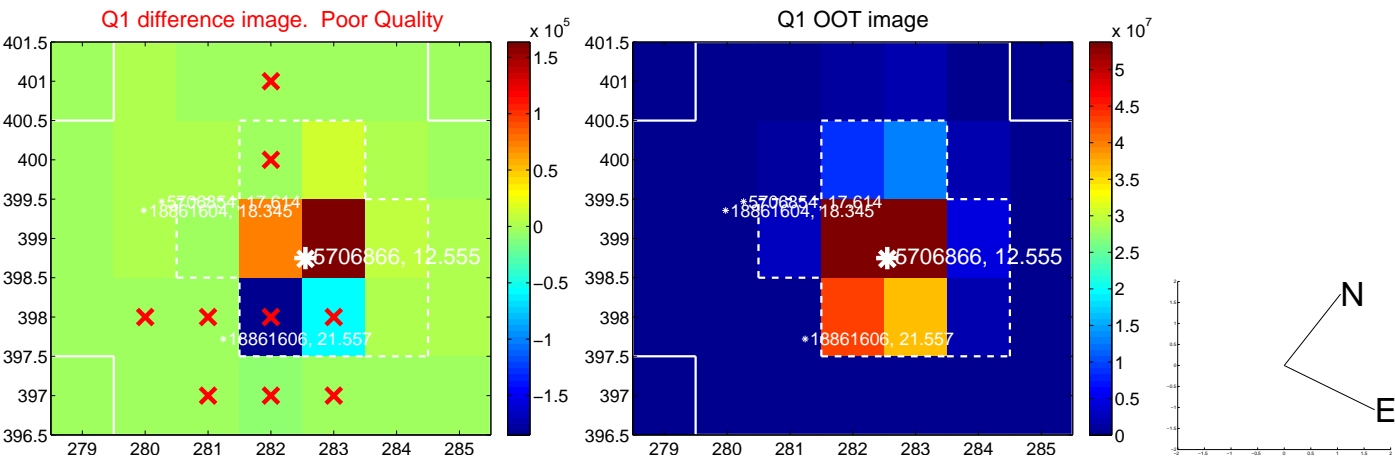


offset from photometric centroids

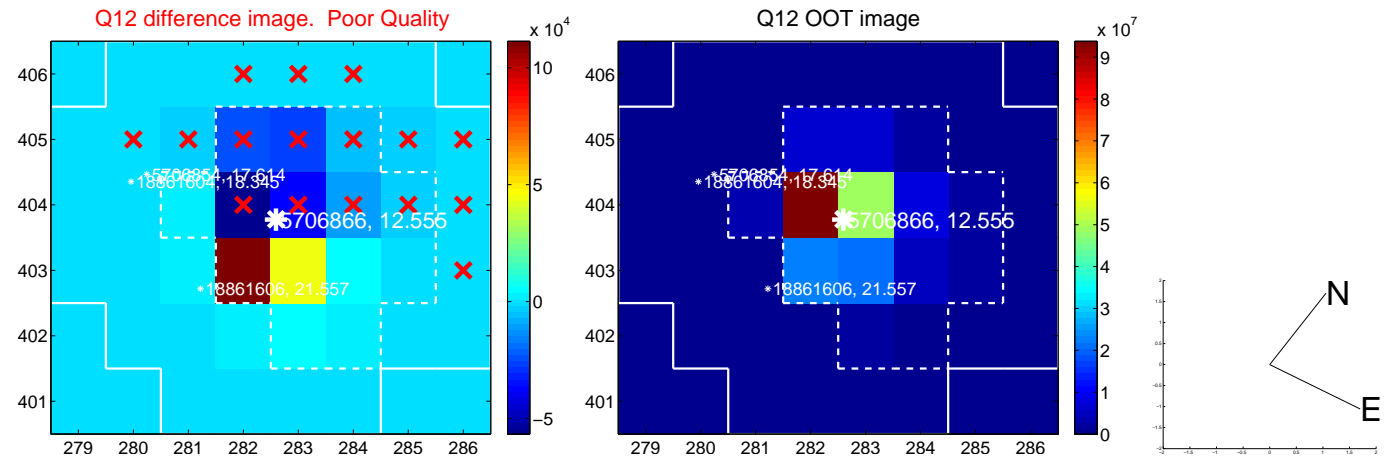
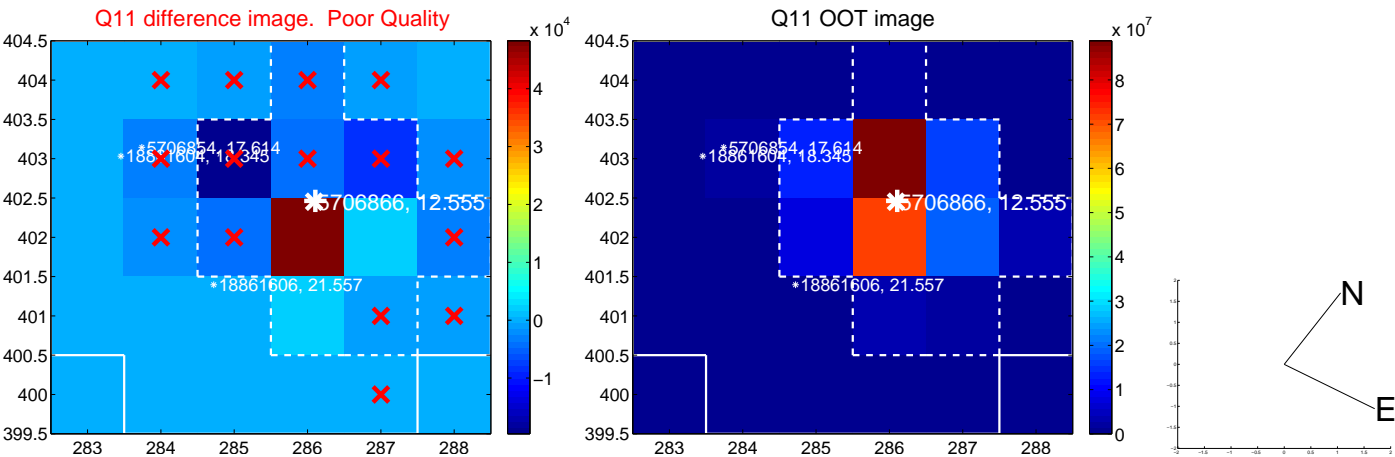
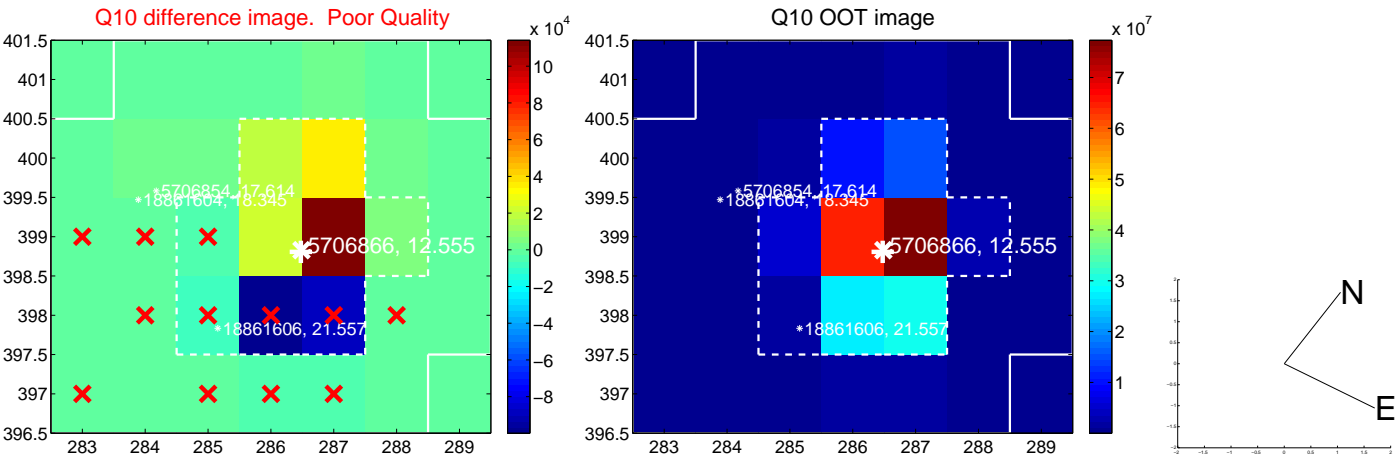
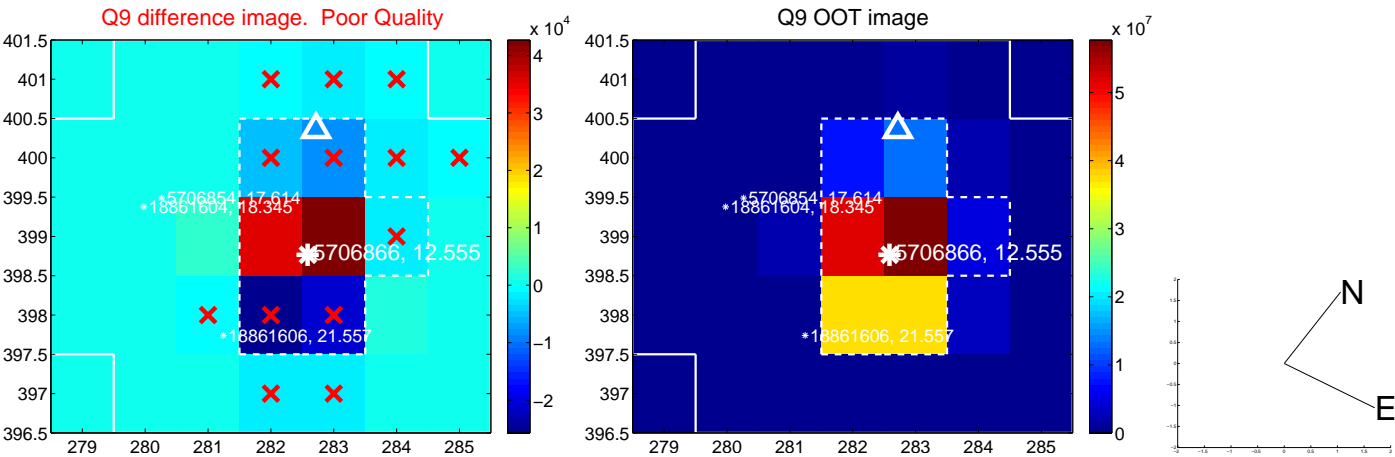


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

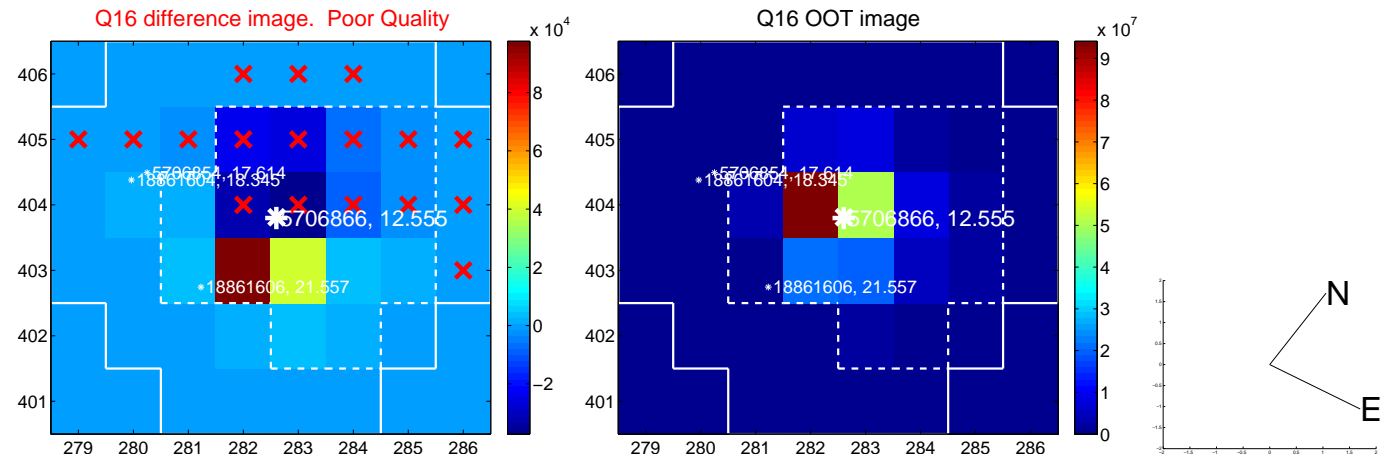
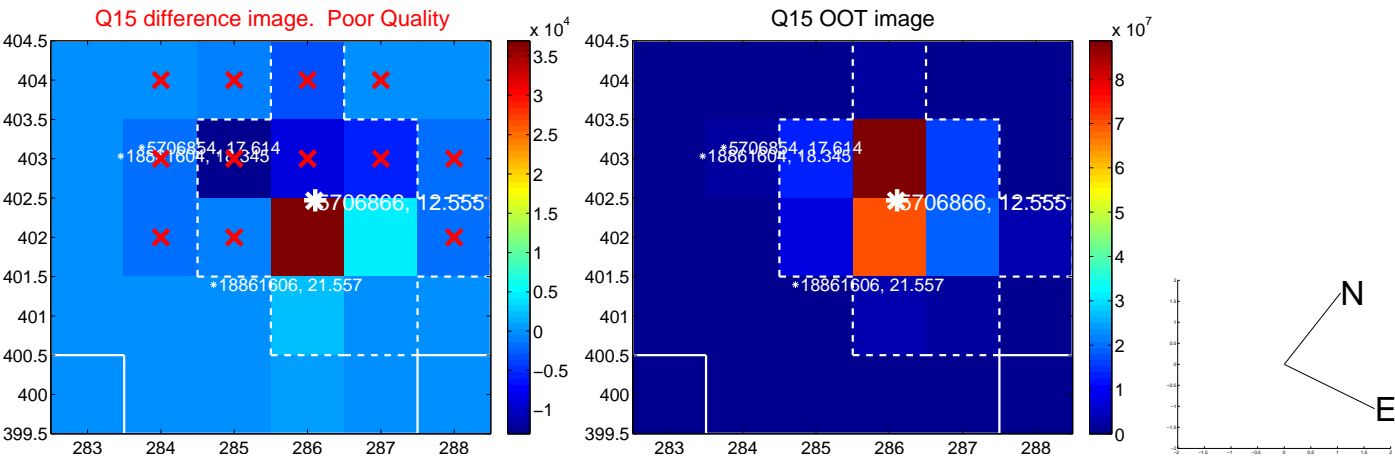
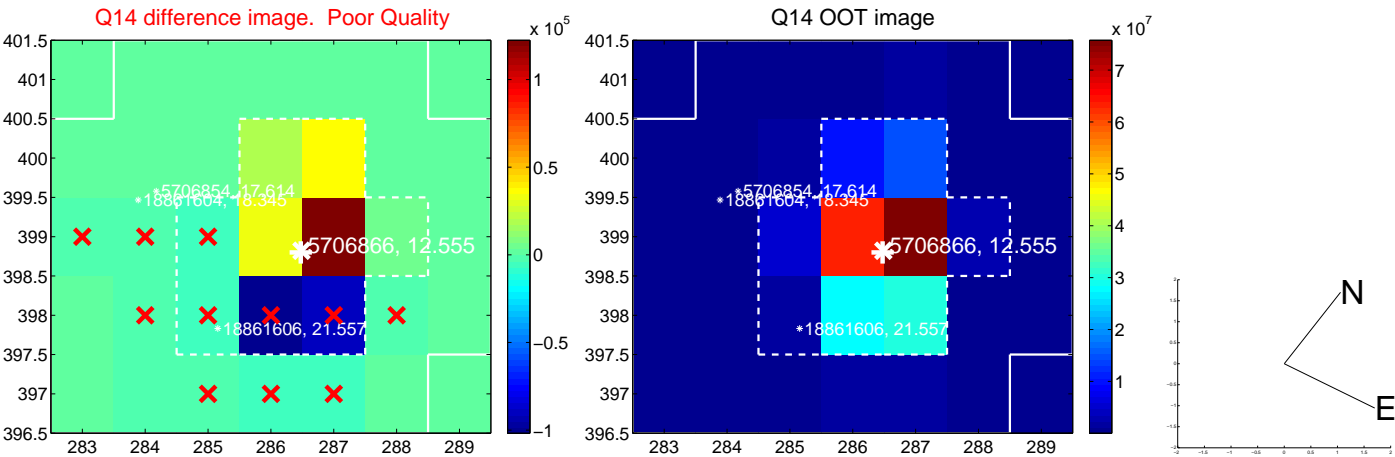
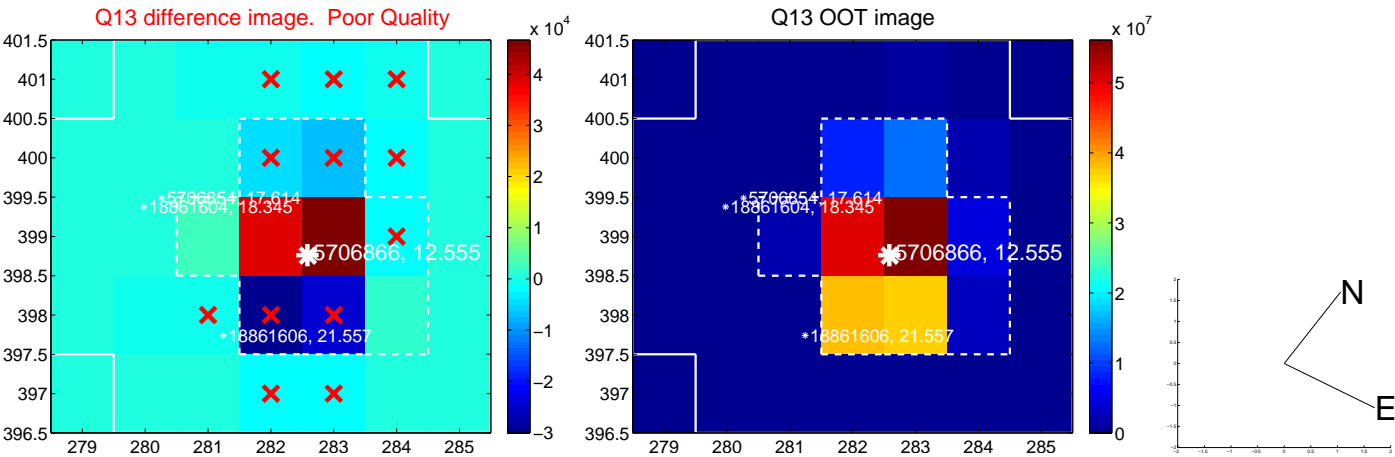
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



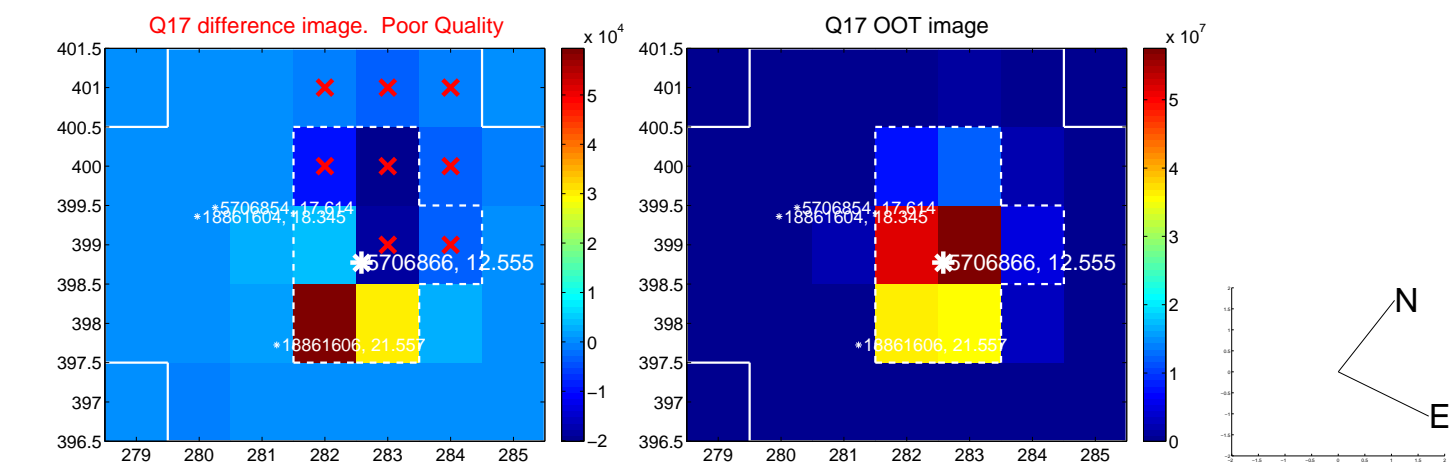
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



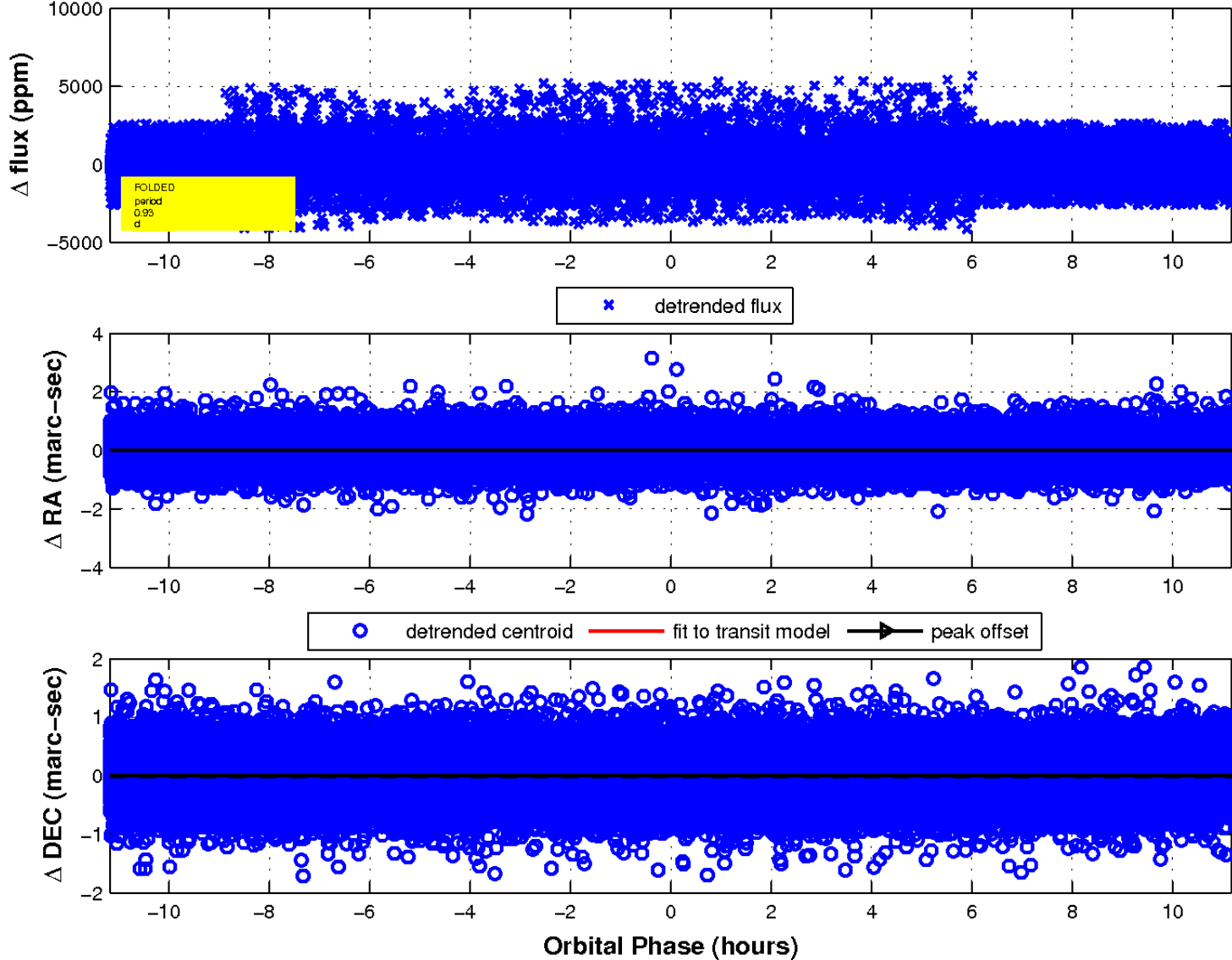
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

